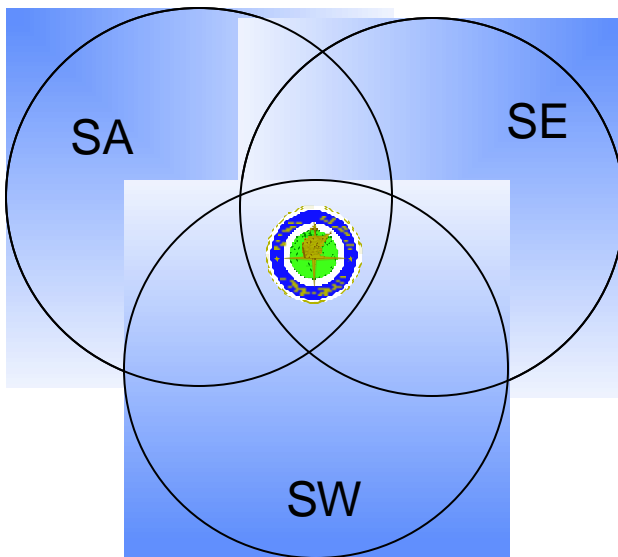


---

# **The Federal Aviation Administration Integrated Capability Maturity Model<sup>sm</sup> (FAA-iCMMâ) Appraisal Method (FAM)**

## **Version 1.0**

---



**Linda Ibrahim  
Larry LaBruyere  
Pete Malpass  
John Marciniak  
Art Salomon  
Chuck Weigl**

**Federal Aviation Administration**  
800 Independence Avenue, SW  
Washington, DC 20591

April 1999

<sup>sm</sup> Capability Maturity Model is a service mark of Carnegie Mellon University  
CMM® is registered in the US Patent Office.

---



This work is sponsored by the FAA.

This work has been developed in part by adapting portions of the following documents. Permission to copy or use in derivative works is subject to the following copyright permissions.

*The Systems Engineering Capability Maturity Model (SE-CMM) Appraisal Method, Version 1.1*  
*Technical Report, CMU/SEI-96-TR-xxx, 4/96 (SAM)*

Copyright © 1996 by Carnegie Mellon University. This work is a collaborative effort of EPIC (Enterprise Process Improvement Collaboration) composed of GTE Government Systems, Electric Boat Division of General Dynamics Corporation, Federal Aviation Administration, NIST, Office of the Undersecretary of Defense for Acquisition and Technology, Defense Logistics Agency, Hughes Aircraft Company, Lockheed Martin Corporation, the Software Productivity Consortium, Texas Instruments, Inc., and the Software Engineering Institute. Permission to reproduce this product and to prepare derivative works from this product is granted royalty-free, provided the copyright is included with all reproductions and derivative works.

*CMM-Based Appraisal for Internal Process Improvement (CBA IPI): Method Description*, Donna Dunaway and Steve Masters, CMU/SEI-96-TR-007, April 1996.

*Software Capability Evaluation, v3.0 Method Description*, Paul Byrnes and Mike Phillips, CMU/SEI-96-TR-002, April 1996.

*Interim Profile: Development and Trial of a Method to Rapidly Measure Software Engineering Maturity Status*, Roselyn Whitney et. al, CMU/SEI-94-TR-4, March 1994.

Copyright © 1994, 1995, 1997 by Carnegie Mellon University. Permission to reproduce this document and to prepare derivative works from this document for internal use is granted, provided the copyright and "No Warranty" statements are included with all reproductions and derivative works.

#### No Warranty

This Carnegie Mellon University and Software Engineering Institute material is furnished on an "as-is" basis. Carnegie Mellon University makes no warranties of any kind, either expressed or implied, as to any matter including, but not limited to, warranty of fitness for purpose or merchantability, exclusivity, or results obtained from the use of the material. Carnegie Mellon University does not make any warranty of any kind with respect to freedom from patent, trademark, or copyright infringement.



# Table of Contents

---

To the Reader	vi
Chapter 1: Introduction to the FAA-iCMM Appraisal Method	1-1
1.1 Summary of the FAA-iCMM Appraisal Method	1-2
1.2 Context and Usage	1-8
1.3 Appraisal Roles	1-16
Chapter 2: FAM Process Description	2-1
2.1 <b>Plan and Prepare for the Appraisal</b>	2-3
2.1.1 Obtain Sponsor Commitment	2-4
2.1.2 Select Appraisal Scope	2-7
2.1.3 Select Appraisal Team	2-10
2.1.4 Plan Appraisal Details	2-13
2.1.5 Orient Participants	2-17
2.1.6 Train Team	2-20
2.1.7 Administer Questionnaire	2-23
2.1.8 Develop Exploratory Questions	2-26
2.2 <b>Conduct Appraisal</b>	2-29
2.2.1 Conduct Opening Meeting	2-30
2.2.2 Interview Participants	2-32
2.2.3 Review Documentation	2-36
2.2.4 Consolidate Data	2-40
2.2.5 Develop Draft Findings	2-44
2.2.6 Present Draft Findings	2-47
2.2.7 Develop Ratings	2-50
2.2.8 Develop Final Briefing	2-55
2.2.9 Brief Sponsor	2-57
2.2.10 Present Final Briefing	2-60
2.2.11 Conduct Wrap-up	2-63
2.3 <b>Report Results</b>	2-66
2.3.1 Prepare and Deliver Appraisal Report	2-67
2.3.2 Manage Records	2-69
Chapter 3: Alternative Appraisal Type Descriptions	3-1
3.1 Facilitated Discussion	3-3
3.2 Document-Intensive Appraisal	3-29
3.3 Questionnaire-based Appraisal	3-45
3.4 Interview-based Appraisal	3-75
3.5 Full External Evaluation	3-89
Appendices	
Appendix A: Definitions and Acronyms	A-1
Appendix B: References	B-1
Appendix C: Traceability to CMM-Based Appraisal Framework (CAF), v1.0	C-1
Appendix D: Change History and Change Request Form	D-1
Appendix E: List of Appraisal Aids	E-1
Appendix F: Traceability to ISO/IEC TR 15504 Requirements	F-1

# To the Reader

---

## Abstract

The purpose of this document is to provide a rigorous appraisal method to use with the Federal Aviation Administration Integrated Capability Maturity Model (FAA-iCMM®). This FAA-iCMM Appraisal Method (FAM) describes each activity of a formal FAA-iCMM-based appraisal and also provides alternative appraisal variations plus descriptions of when and how to use all of them appropriately during implementation of FAA-iCMM-based process improvement. Separately available toolkits contain additional guidance material, tools, templates, forms, and training materials for each type of appraisal.

---

## Who should use FAM?

Organizations or projects performing engineering, acquisition, and management activities in the systems acquisition life cycle are candidates for using the FAA-iCMM and the FAM. Organizations that need to understand good systems engineering, software engineering, acquisition, and management practices can use FAM as the starting point of an effort to improve their systems acquisition process. The FAA-iCMM is focused on the needs of four primary groups:

- practitioners,
- process developers,
- individuals charged with appraising how specific organizations implement their processes, and
- managers.

These are also the key groups that will be interested in these appraisals.

---

## What is the scope of FAM?

The scope of FAM includes explicit variations and tailoring guidance for appraisals throughout the implementation of a process improvement effort from startup to the achievement of high maturity. This document is a process description for FAM, not a training manual. Some materials are included that support appraisal training or the development of appraisal training materials; however, it is *not* the intent of this document or its toolkits to be a substitute for appraisal training.

## To the Reader, continued

---

### **How should it be used?**

The FAM description was developed to support self-appraisal and third-party appraisal or external evaluation of an organization against the FAA-iCMM.

---

### **The term “appraisal”**

We use the generic term “appraisal” for this method since through the method and its variations it encompasses both internal appraisals (sometimes called “assessments”) and external third-party appraisals (sometimes called “evaluations”).

---

### **Who developed FAM?**

FAM was developed by the Federal Aviation Administration (FAA) with supporting team members from TRW/SETA and the Software Engineering Institute (SEI). The author team and affiliations are:

Linda Ibrahim, Project Leader – FAA

Larry LaBruyere – TRW/SETA

Pete Malpass – Software Engineering Institute

John Marciniak – Software Engineering Institute

Art Salomon – FAA

Chuck Weigl – TRW/SETA

---

### **Acknowledgements**

The FAM team wishes to thank the reviewers for their valuable comments:

ASD Review Team

Software Engineering Institute Members of the CAF-CCB  
(for review of Full Internal Method, v0.5)

Sarah Sheard, Software Productivity Consortium

Glenn Booker, DSCI/EI

We further acknowledge the editorial support of Tanae Gilmore, TRW/SETA.

---

## To the Reader, continued

---

### **For further information**

If you have any questions about this method or about appraisals using the FAA-iCMM, please contact the FAA-iCMM Project Leader:

Dr. Linda Ibrahim  
Federal Aviation Administration, AIO-200  
800 Independence Ave., SW  
Washington, DC 20591

202-267-7443 (voice)

202-267-5080 (fax)

[linda.ibrahim@faa.gov](mailto:linda.ibrahim@faa.gov) (email)

---

### **Copyright permission**

The FAA intends to use the FAA-iCMM Appraisal Method as a process description for appraisals of its internal systems acquisition processes. The copyright notices of documents from which this has been derived bind users of this document, as indicated on the inside cover of this document.

# Chapter 1: Introduction to the FAA-iCMM Appraisal Method

## Overview of document

This document contains basic information on the FAA-iCMM appraisal method (FAM). It is structured into three chapters and appendices.

- Chapter 1 contains the appraisal context, overview of the method and its variations, and role descriptions.
- Chapter 2 contains process descriptions of each of the major activities in the full internal appraisal. The major activities are “Plan and Prepare for the Appraisal,” “Conduct Appraisal,” and “Report Results.”
- Chapter 3 contains process descriptions of five alternative types of appraisals (variations), with cross-references to the full internal appraisal.
- The appendices contain definitions and acronyms, references, cross-references of FAM steps to the CMM-based Appraisal Framework (CAF) v1.0, the change history and a change request form for this document, and cross-references of the FAM and the FAA-iCMM to ISO/IEC TR 15504 requirements.

Separately available appraisal guidance and toolkits provide additional guidance, training materials, forms and templates. Appendix E enumerates these appraisal aids.

## In this chapter

The following table provides a guide to the information found in this chapter.

Topic	See Page
1.1 Summary of the FAA-iCMM Appraisal Method	1-2
1.2 Context and Usage	1-8
1.3 Appraisal Roles	1-16

# 1.1 Summary of the FAA-iCMM Appraisal Method

---

## Introduction

This section provides a brief overview of the phases of a full FAA-iCMM appraisal. Each of these phases is provided as a series of process activities in Chapter 2 with additional “how-to” guidance in the toolkit. To meet the specific needs and constraints of an organization wishing to perform an FAA-iCMM appraisal, there are five (5) appraisal variations. The variations are overviewed in Section 1.2 and described in Chapter 3. Tailoring is encouraged for all of these, with example materials and templates in the toolkit.

---

## Appraisal purposes

Appraisals are typically performed

- to focus, motivate, direct, and/or launch improvement within the organization,
- as a diagnostic to determine status compared to a model or standard, or
- to form a baseline for, or to track, self-improvement.

An appraisal will typically identify strengths and weaknesses in the appraised entity’s process and produce a process capability profile that compares the appraised entity to a standard (the FAA-iCMM). It may also identify process assets and relate them to the model.

Because of the way the FAA-iCMM was constructed, i.e. to capture all features of the source CMMs that were integrated, FAA-iCMM appraisal results will be consistent with appraisals conducted against the source models as applicable. Thus a rating on an FAA-iCMM process area would be equivalent to achieving that rating on the source key process areas/ process areas that were used in developing that integrated process area.

---

## 1.1 Summary of the FAA-iCMM Appraisal Method, Continued

---

### **Appraisal selection and scope**

The appraisal method or variation is selected to meet the organization's appraisal objectives. These will depend on the appraised entity's process improvement context (see section 1.2) as well as desired appraisal scope.

Appraisals can be focused on almost any business unit of an enterprise: a specific project, program, strategic business unit or line of business, or the entire enterprise. Scope is based upon the sponsoring organization's goals.

Three major aspects of appraisal scope are the model (process areas, capability levels, maturity levels), entity appraised (projects included, etc.), and life cycle coverage (mission analysis, investment analysis, solution implementation, in-service management, or the whole life cycle). These have a significant impact on the duration and resources required for the appraisal that in turn help select the appropriate variation and its tailoring.

---

### **Results**

The primary work products of a FAA-iCMM appraisal are a findings briefing and an appraisal report. The final findings briefing is presented at the end of the Conduct Appraisal phase. It includes a process capability profile and appraisal findings. The findings address both strengths and weaknesses of the appraised entity. The appraisal team writes the appraisal report after the final briefing; it includes more detail on each of the findings and specific recommendations for process improvement based on the findings.

---

## 1.1 Summary of the FAA-iCMM Appraisal Method, Continued

### Phases

Table 1-1 lists the phases of the appraisal process. The steps for each phase are fully described in Chapter 2. Figure 1-1 shows the overall process flowchart for a full internal appraisal in accordance with the Chapter 2 process description. Figures 1-2 through 1-4 provide activity descriptions for each phase.

Phase	Description
Plan and Prepare for the Appraisal	The activities done in preparation for an appraisal
Conduct Appraisal	The activities done in data gathering, analysis, and presentation.
Report Results	The activities done after the appraisal briefing.

**Table 1-1. Appraisal Phases**

#### **Plan and Prepare for the Appraisal**

- Obtain Sponsor Commitment
- Select Appraisal Scope
- Select Appraisal Team
- Plan Appraisal Details
- Orient Participants
- Train Team
- Administer Questionnaire
- Develop Exploratory Questions

#### **Conduct Appraisal**

- Conduct Opening meeting
- Conduct Interviews
- Review Documentation
- Consolidate Data
- Develop Draft Findings
- Present Draft Findings
- Develop Ratings
- Develop Final Briefing
- Brief Sponsor
- Present Final Briefing
- Conduct Wrap-Up

#### **Report Results**

- Prepare and Deliver Appraisal Report
- Manage Records

**Figure 1-1. Full Internal Appraisal Flowchart**

## 1.1 Summary of the FAA-iCMM Appraisal Method, Continued

### Plan and Prepare Phase

Figure 1-2 summarizes the steps in the Plan and Prepare for Appraisal phase.

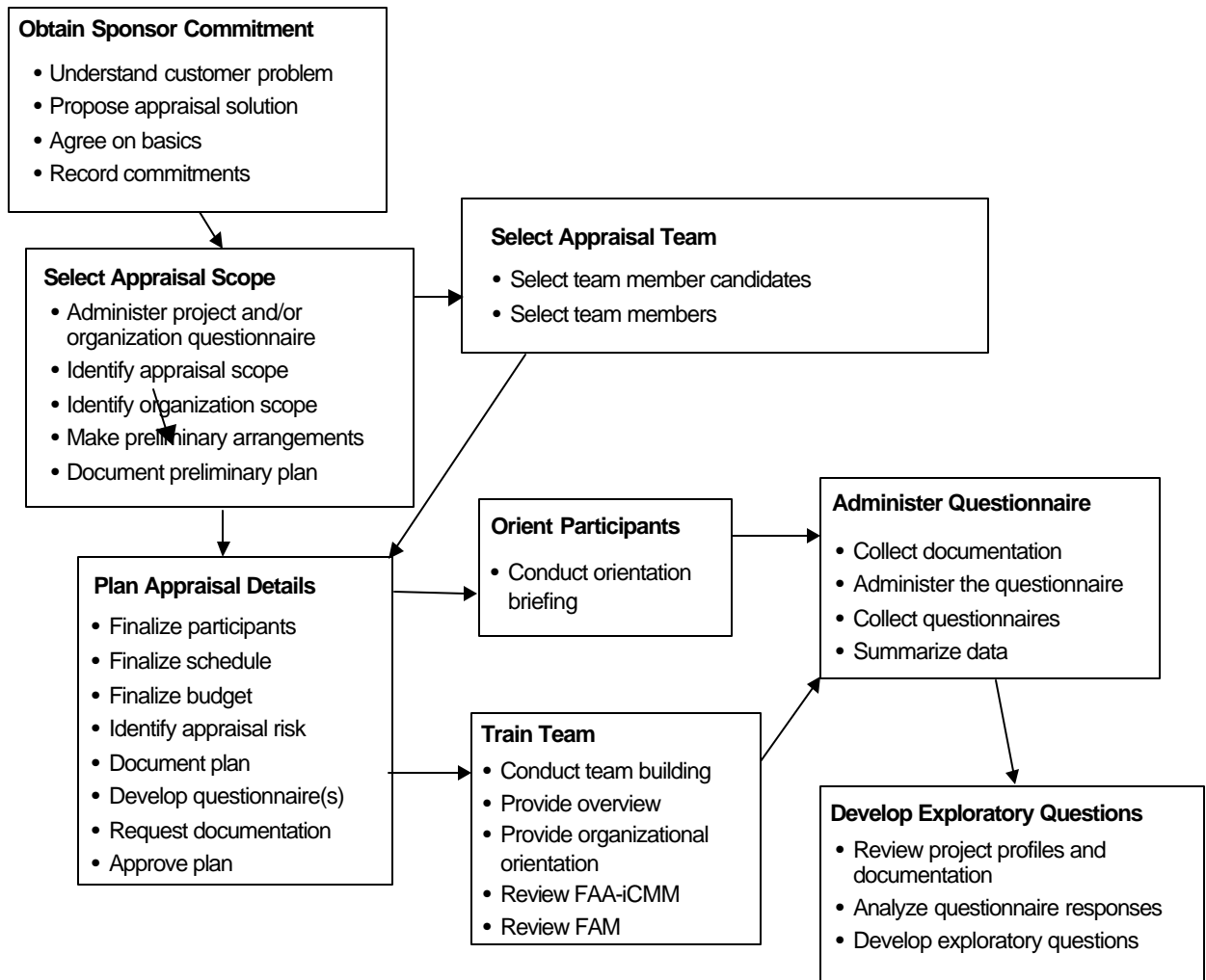


Figure 1-2. Plan and Prepare for Appraisal Phase.

## 1.1 Summary of the FAA-iCMM Appraisal Method, Continued

### Conduct Appraisal Phase

Figure 1-3 summarizes the steps in the Conduct Appraisal phase.

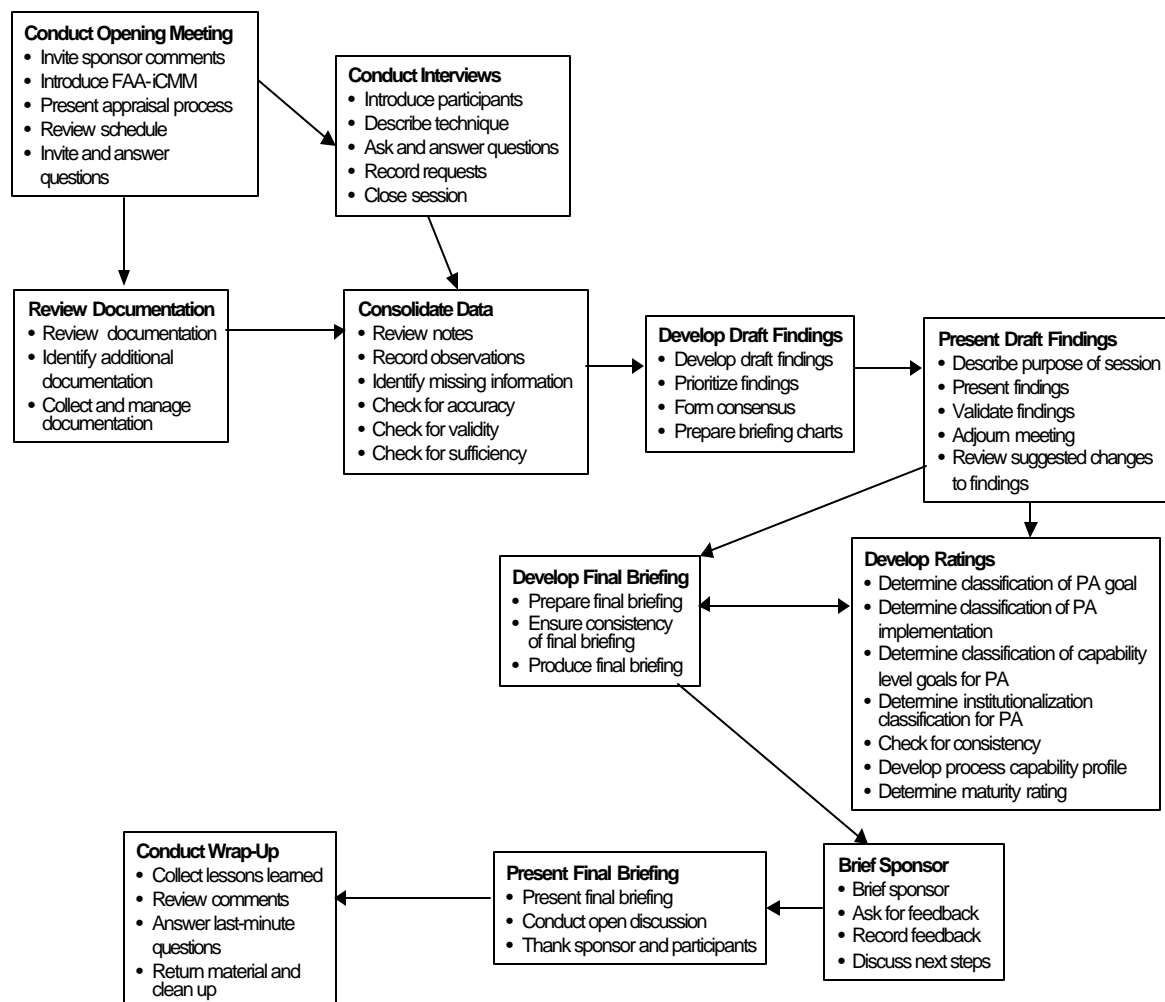


Figure 1-3. Conduct Appraisal Phase.

## 1.1 Summary of the FAA-iCMM Appraisal Method, Continued

---

### Report Results Phase

Figure 1-4 summarizes the steps in the Report Results Phase.

---

#### **Prepare and Deliver Appraisal Report**

- Review final briefing
- Plan the preparation of the report
- Write the report
- Review/revise the report
- Distribute/deliver the report

#### **Manage Records**

- Gather materials
- Decide disposition
- Transfer materials to be kept
- Destroy unwanted materials

**Figure 1-4. Report Results Phase.**

---

## 1.2 Context and Usage

---

### Introduction

This section presents the underlying assumptions about the context of process improvement that are relevant to using FAM.

---

### Assumptions

This FAM description is based on the following assumptions:

- Appraisals are performed in the context of an organizational process improvement effort, and the type and tailoring are dependent on where in the organizational process improvement cycle the organization is.
  - Readers are familiar with the content and concepts of *The FAA Integrated Capability Maturity Model (FAA-iCMM), Version 1.0*, that serves as the reference model for this appraisal method.
  - FAM appraisal team leaders have been trained in this appraisal method.
  - Although FAM can be tailored to either self-improvement or external evaluation, the intent of the model and appraisal method is self-improvement.
- 

### Process improvement context

Appraisals fit in the broad context of a process improvement program. Figure 1-5 presents a model for process improvement programs. The FAA has adapted and adopted this model and approach from the SPICE model [ISO/TEC TR 15504-7:1998(E)]. Each step is briefly explained below.

---

## 1.2 Context and Usage, continued

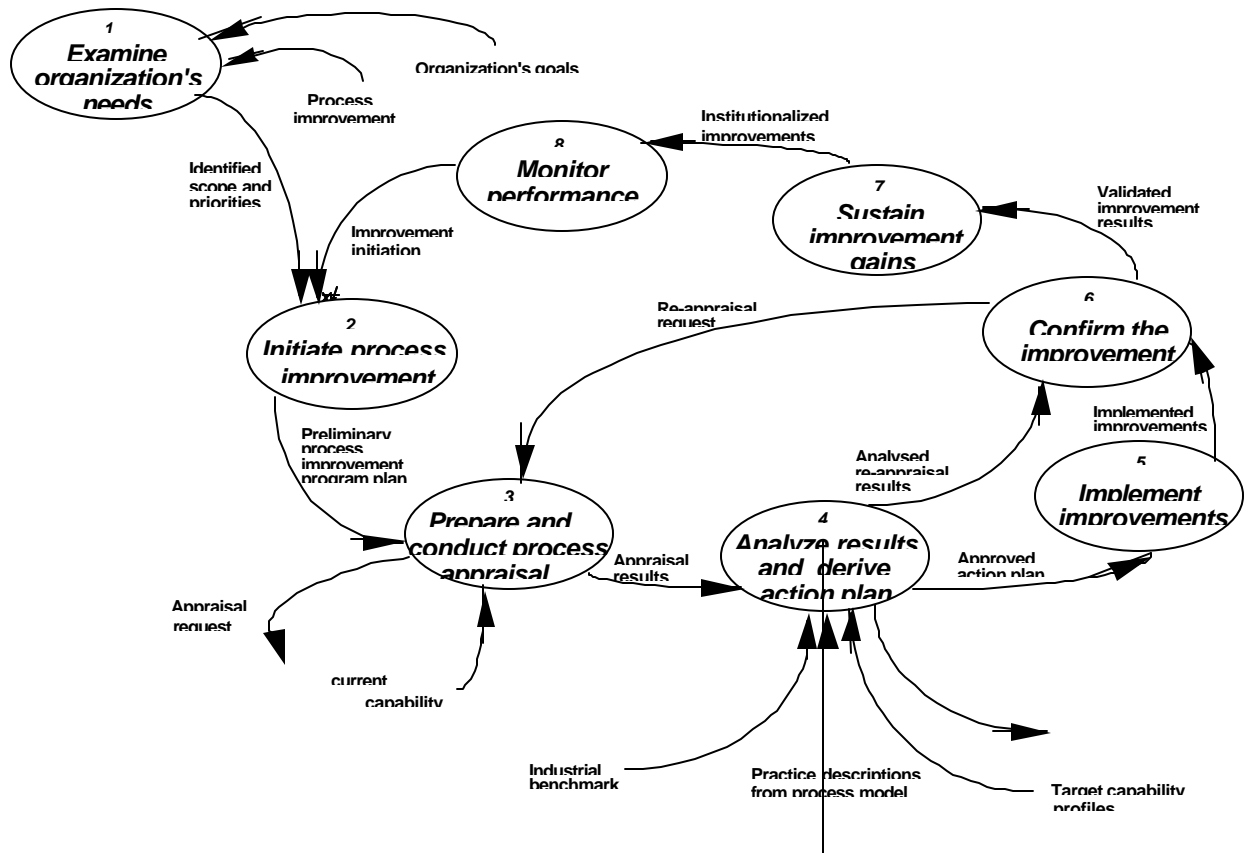


Figure 1-5. Process Improvement Model

- |  |  |
|--|--|
| <p><b>1. Examine organization's needs</b></p>  | <p>Purpose: Ensure process improvement is aligned with organization's needs</p> <p>Output: Quantitative process improvement goals tied to organization's business plan</p>                       |
| <p><b>2. Initiate process improvement</b></p>  | <p>Purpose: Ensure plan is laid out and infrastructure is in place</p> <p>Outputs: Preliminary program plan; charters; empowerment letters; resources; technical strategy (FAA-iCMM and FAM)</p> |
| <p><b>3. Prepare and conduct appraisal</b></p> | <p>Purpose: Determine current situation</p> <p>Output: Appraisal results</p>   |

## 1.2 Context and Usage, continued

---

- |   |  |
|---|--|
| <b>4. <i>Analyze results and derive action plan</i></b> | Purpose: Decide on improvements and plan accordingly<br>Outputs: Quantitative improvement targets; action plan, integrated with revised program plan; commitment to undertake planned improvements                       |
| <b>5. <i>Implement improvements</i></b>                 | Purpose: Carry out projects to improve processes<br>Outputs: Project plans; improved processes; measures; process definitions, checklists, lessons learned, tailoring guidelines, training materials, sample documents   |
| <b>6. <i>Confirm improvement</i></b>                    | Purpose: Confirm improvement achieves goals and organization is ready for widespread use<br>Output: Reappraisal results (on specific processes); measures; validated results   |
| <b>7. <i>Sustain improvement gains</i></b>              | Purpose: Institutionalize and monitor the improvement<br>Output: Deployment plan; improved process assets entered into process asset library; widespread training on improved process; coaching and monitoring; measures |
| <b>8. <i>Monitor performance</i></b>                    | Purpose: Ensure program and projects remain appropriate; improve process improvement process<br>Output: Further improvement initiatives; lessons learned   |
- 

### **Appraisals in improvement**

As illustrated above, appraisals are conducted to establish baseline measures of process capability and derive action plans (steps 3 and 4 above). Improvements are also reconfirmed via reappraisals (step 6).

Appraisals are always about comparing practices actually performed against a standard. The intended result is to produce better performance.

---

## 1.2 Context and Usage, continued

### Application of Appraisals

There are six types of appraisal described in this manual. They are designed to meet a variety of process improvement needs for an organization. The full internal method is the standard method of which the other types are variants.

The appraisal types, their purposes, and typical duration, are summarized in Table 1-2. Note that some FAM variations are intended to assist lower maturity or capability level programs to meet improvement goals.

For all appraisal types, the Plan and Prepare for the Appraisal phase ranges from about 15 to 45 days.

Appraisal Type	Purpose	Typical Duration
Full internal	Establish or reestablish a formal baseline of actual practice in the organization. Formal comparison of practices to the model.	7-17 days over 2-6 weeks
Facilitated Discussion	Formulate process descriptions and implementation plans for a process area.	4-16 weeks over 7-26 weeks
Document-Intensive	Check the completeness and quality of supporting documentation and artifacts.	3-10 days over 2-5 weeks
Questionnaire-based	Quick check on process improvement progress based on whether improvements are perceived to have been implemented by personnel.	2-8 days over 3-6 weeks
Interview-based	Uncover major process improvement issues or barriers to change.	5-17 days over 1-6 weeks
Full external	Formal external appraisal of organization, based on the model.	7-17 days over 2-6 weeks

**Table 1-2. Appraisal Types and Usage Characteristics**

## 1.2 Context and Usage, continued

---

**Organizational  
baseline  
via  
Full Internal  
Appraisals**

At the organization-wide level of interest, a full internal appraisal will generally be used to diagnose the current situation, establish an organizational baseline of actual practice in the organization, and identify the priority needs of the organization for process improvement. This step may come first, if executive or organizational awareness is needed about process improvement, or it may come after some process establishment and improvement has occurred to check on progress and distribution of the improved processes. The internal appraisal is to focus the organization on widest possible scope of improvement to gain the benefits of economy of scale. The full internal appraisal is described in Chapter 2. It is designed to be consistent with the CMM-Based Appraisal for Internal Process Improvement (CBA-IPI) and also draws on the SE-CMM Appraisal Method (SAM).

---

**Process  
Description  
via  
Facilitated  
Discussion**

When an organization needs to create some process descriptions, a Facilitated Discussion appraisal method is very appropriate. This method identifies the practices and goals currently satisfied in an individual process area (the “as-is” process description), provides a “to-be” (compliant) process description, and an implementation plan that the organization element(s) responsible for the process can use to deploy the compliant process. This method is described in Section 3.1.

---

**Tracking  
improvement  
via  
Questionnaire-  
based Appraisals**

Once improvement efforts have been underway, a questionnaire-based appraisal provides periodic tracking of the improvement’s implementation. These should not be performed any more frequently than quarterly for any particular process area efforts. Accuracy may be somewhat low early in the improvement efforts, but sampling can provide a sufficiently accurate “snapshot” to indicate to management whether intervention is needed or not. Sometimes this is used to remind practitioners in the improvement effort that management is interested in their work and results. This type of appraisal is described in Section 3.3, and is based on the Interim Profile method (IP).

---

## 1.2 Context and Usage, continued

---

### **Focusing improvement efforts via Interview-based Appraisals**

An interview-based appraisal can be conducted to uncover the most important issues to resolve. These are shorter and somewhat less comprehensive than full appraisals but use fewer resources, and still build consensus for adjustments in improvement focus. This type of appraisal is described in Section 3.4, and it is partly based on SE-CMM Appraisal Method (SAM).

---

### **Preparing for a full appraisal via Document-intensive Appraisals**

Full appraisals require documentation, artifacts, and other evidence or proof of performance of practices or goal satisfaction. The document-intensive appraisal type organizes and verifies completeness of the set of documentation typically in preparation for a full appraisal or just to formalize the process asset repository or library. It may be a periodic process group exercise or training exercise to orient new process improvement staff. This appraisal type is described in Section 3.2.

---

### **Organizational Evaluation via Full External Appraisals**

Full external appraisals determine the process capability of the organization. They are similar to full internal appraisals, but are performed by others typically to evaluate the organization's capability. This appraisal type is described in section 3.5. It is based on the CMM-Based Appraisal for Software Capability Evaluation (SCE) method.

---

## 1.2 Context and Usage, continued

---

### Case Studies

In order to elaborate the usage of the FAM and its variations, the following two hypothetical scenarios are provided. Naturally, other scenarios are possible depending on the needs and culture of the organization.

---

#### Case 1

An organization, AXX, has considered and is committed to a process improvement program. AXX believes that it is in fairly good shape with respect to the appropriate process areas of the FAA-iCMM that it is involved with. They believe that they have experience in the practices of the FAA-iCMM and that their documentation is adequate. Because of this, and the fact that the director wants to know where they stand with respect to the FAA-iCMM, they have decided that a full FAM is required. The FAM results are fairly good, justifying their approach, and they next want to create a formal process improvement program. Based on the FAM results, they have selected several process areas to focus on. In order to build process descriptions and implementation plans for these process areas, AXX has decided to employ the facilitated discussion (FD) method.

After a period of about nine months, AXX wishes to take a quick check on results. They do not believe that a full FAM is necessary at the time so they opt for a questionnaire-based appraisal (QBA). If the QBA results are good they will add additional process areas to their improvement program, again using the FD method to develop implementation plans. One of the things that the QBA picks up is that while practices are good, documentation has not appreciably improved. In order to evaluate and baseline their documentation progress, AXX decides to employ a document intensive (DI) appraisal. The DI results are integrated into their improvement program efforts and they plan on conducting another FAM to re-baseline their process against the FAA-iCMM in the 18-24 month period since the improvement program began.

Note that the timeline for this case is about two years. The organization may wish to spread this out depending on resources, implementation schedule, and organizational goals. Notice that three FAM variations were employed, along with the full FAM.

---

## 1.2 Context and Usage, continued

---

### Case 2

In this case, the organization, AYY, is not sure about proceeding with a full process improvement program but recognizes that it has engineering, acquisition, and management issues. They believe it is more important to focus on major issues before taking the plunge into a formal program. Because of this, they decide that the interview-base (IB) method is the appropriate one for them at this point. AYY decides to tackle two issues, directly related to process areas in the FAA-iCMM. They employ the FD method to develop their process improvement plans. In about nine months AYY decides it is time to check the progress of this program. To get a quick check, they decide to employ the QBA method.

The results are good, and AYY is now comfortable with process improvement. They decide to pursue their process improvement efforts with increased intensity and request that a FAM be conducted to baseline their practices against the FAA-iCMM.

Note that the timeline for this scenario is about one year. Notice that two FAM variations were employed, along with the FAM.

---

## 1.3 Appraisal Roles

### Roles

Table 1-3 defines the roles that are typically involved in an appraisal. The responsibilities and functions performed by each of the roles are further defined in Chapter 2. Multiple roles may be assigned to one person as appropriate. Roles may vary for the different appraisal types, as described in Chapter 3.

Role Name	Description
Appraisal advocate	Individual who advocates the appraisal to the sponsor and management groups and obtains the commitments for the appraisal. The advocate usually provides the site coordinator and engages the sponsor or others in removing any obstacles that may be encountered.
Sponsor	<p>Individual who provides the resources for the appraisal and the commitment to the process improvement effort in the organization being appraised. The sponsor shows commitment by</p> <ul style="list-style-type: none"><li>• participating in both the opening and closing meetings of the Conduct Appraisal phase</li><li>• approving the appraisal plan and resources to perform the appraisal</li></ul> <p>The sponsor receives and owns appraisal results and commits to act upon them.</p>
Appraisal team leader (ATL)	<p>Team member who</p> <ul style="list-style-type: none"><li>• Is verified by the FAA Corporate process group and the sponsor as having the necessary competence and skills to lead, perform or oversee the appraisal</li><li>• Provides appraisal materials and guidance as needed</li><li>• Trains the appraisal team on the model and method</li><li>• Leads the appraisal process</li><li>• Provides FAA-iCMM and FAM expertise</li><li>• Has experience managing teams, facilitating discussions, using the appraisal method, and preparing and making presentations</li><li>• Verifies the FAM method or variation is being followed</li></ul>

Table 1-3. Appraisal Roles (Part 1 of 4)

## 1.3 Appraisal Roles, continued

Role Name	Description
Organization appraisal representative (OAR)	Team member who <ul style="list-style-type: none"><li>• Is looked to as the organizational or site expert</li><li>• Is the point of contact for the team, especially for follow-up activities.</li></ul>
Appraisal team	<p>The appraisal team consists of those who conduct the appraisal. This group includes the following roles:</p> <ul style="list-style-type: none"><li>• Appraisal team leader</li><li>• Organization appraisal representative</li><li>• Team members drawn from the organization being appraised</li><li>• Team members external to the organization being appraised</li></ul> <p>Two informal roles are data manager and timekeeper.</p> <p>The team qualifications should include:</p> <ul style="list-style-type: none"><li>• 5 or more years work experience each</li><li>• at least 25 years total work experience</li><li>• at least one member with at least 6 years experience in management</li><li>• at least 10 years total management experience</li></ul> <p>The team collectively should cover the appraisal scope.</p> <p>The team should include those who are opinion leaders in the organization and are likely to champion process improvement efforts after the appraisal. Some team members may be new and need to learn about the organization from the experience.</p>

**Table 1-3. Appraisal Roles (Part 2 of 4)**

## 1.3 Appraisal Roles, continued

Role Name	Description
Data Manager	<p>Team member who</p> <ul style="list-style-type: none"><li>• Tracks document requests and coordinates receipt and return with the site coordinator during the Conduct Appraisal phase</li><li>• Manages documents and artifacts requested by the team during the Conduct Appraisal phase</li><li>• Oversees records disposition during Report Results phase</li></ul>
Timekeeper	<p>Team member who</p> <ul style="list-style-type: none"><li>• supports the appraisal team leader by reminding the team of time constraints during sessions.</li></ul> <p>Typically the timekeeper will note half way points, and five minutes to go, as well as expiration of session time.</p>
Site coordinator	<p>Organizational member who</p> <ul style="list-style-type: none"><li>• Arranges facilities and other resources for the appraisal</li><li>• Schedules people and activities</li><li>• May administer, collect, and record questionnaires, and collect and organize documentation for review</li><li>• May provide clerical support during team activities</li></ul>
Appraisal participants	<p>The appraisal participants are the sources of data gathered during an appraisal. This group includes</p> <ul style="list-style-type: none"><li>• Leads with extensive experience across many of the management processes of the model, for example, a project leader, a senior technical practitioner, or an organizational manager</li><li>• Practitioners of systems acquisition, systems engineering, software engineering, or support groups such as QA, CM, etc.</li></ul>

**Table 1-3. Appraisal Roles (Part 3 of 4)**

## 1.3 Appraisal Roles, continued

---

Role Name	Description
Leads	<p>Appraisal participants who have responsibility for a systems acquisition project and/or broad knowledge of the full life cycle of product acquisition. Each lead</p> <ul style="list-style-type: none"><li>• Completes the FAM questionnaire</li><li>• Participates in one or more question and answer sessions</li></ul>
Practitioners	<p>Appraisal participants who</p> <ul style="list-style-type: none"><li>• perform or support the systems acquisition process (direct and indirect, e.g., training, QA/CM, customers, and suppliers).</li></ul> <p>Practitioners are a source of data, primarily via interviews and also as reviewers of the appraisal findings. They may also complete specific process area based questionnaires.</p>

**Table 1-3. Appraisal Roles (Part 4 of 4)**

---

## 1.3 Appraisal Roles, continued

---

### Typical Effort

Table 1-4 defines typical labor requirements for a complete internal appraisal (e.g., full method, all FAA-iCMM process areas, three to five projects or equivalent). Labor requirements can be tailored as a function of the scope of the appraisal.

<b>Role</b>	<b>Recommended number of people</b>	<b>Hours per person</b>	<b>Total hours for this role</b>
Appraisal team leader and Organization appraisal representative	1-2	96-200	96-400
Appraisal team members	4-10	81-166	324-1666
Leads	3-5	6-8	18-40
Practitioners	16-30 in groups of 4 to 10	5-8	80-240
Site Coordinator	1	36-96	36-96
TOTAL	25-46	-	554-2342

**Table 1-4. Typical Levels of Effort for a Full Internal Appraisal**

---

## 1.3 Appraisal Roles, continued

### Typical Effort, continued

The next five tables provide approximate labor requirements for FAM variations.

### Full External

Table 1-5 defines typical labor requirements for a complete external evaluation (e.g., all FAA-iCMM process areas, three to five projects or equivalent). Labor requirements can be tailored as a function of the scope of the appraisal.

Role	Recommended number of people	Hours per person	Total hours for this role
Appraisal team leader (ATL) and Organization appraisal representative (OAR)	1-2	80-220	80-440
Appraisal team members	4-10	81-166	324-1660
Leads	3-5	6-8	18-40
Practitioners	16-30 in groups of 4 to 10	6-8	96-240
Site Coordinator	1	36-96	36-96
TOTAL	25-46	-	554-2104

**Table 1-5. Typical Levels of Effort for a Full External Evaluation**

## 1.3 Appraisal Roles, continued

### Interview-based Appraisal

Table 1-6 defines typical labor requirements for an Interview-based Appraisal assuming scope of all FAA-iCMM process areas, three to five projects or equivalent. Labor requirements can be tailored as a function of the scope of the appraisal.

Role	Recommended number of people	Hours per person	Total hours for this role
ATL and OAR	1-2	80-250	80-500
Appraisal team members	4-10	67-172	268-1720
Leads and Practitioners	16-30	6.5-12	104-360
Site Coordinator	1	36-96	36-96
TOTAL	22-43	-	488-2676

**Table 1-6. Typical Levels of Effort for an Interview-based Appraisal**

### Facilitated Discussion

Table 1-7 defines typical labor requirements for a Facilitated Discussion Appraisal for one process area on one project.

Role	Recommended number of people	Hours per person	Total hours for this role
ATL and OAR	1-2	200-800	200-1600
Appraisal team members	3-8	163-658	489-5264
Leads	1	16-32	16-32
Review Team Members	4-20	19-36	76-720
TOTAL	9-31	-	781-7616

**Table 1-7. Typical Levels of Effort for a Facilitated Discussion Appraisal**

## 1.3 Appraisal Roles, continued

### Document-intensive

Table 1-8 defines typical labor requirements for a Document-intensive appraisal based on appraising one process area on one project.

Role	Recommended number of people	Hours per person	Total hours for this role
ATL and OAR	1-2	8-16	8-32
Appraisal team members	1-2	6-8	6-16
Leads and Practitioners	1-2	2-8	2-16
Site Coordinator	1	1-2	1-2
TOTAL	4-7	-	17-66

**Table 1-8. Typical Levels of Effort for an Document-intensive Appraisal**

### Questionnaire-based Appraisal

Table 1-9 defines typical labor requirements for a Full Questionnaire-based Appraisal for 4 projects.

Role	Recommended number of people	Hours per person	Total hours for this role
ATL and OAR	1-2	16-40	16-80
Appraisal team members	1-2	44-69	44-138
Leads	4	4-5	16-20
Practitioners	50-100	4-5	200-500
Site Coordinator	1	8-16	8-16
TOTAL	7-109	-	284-754

**Table 1-9. Typical Levels of Effort for a Questionnaire-based Appraisal**



## Chapter 2: FAM Process Description

---

### Introduction

This chapter contains process descriptions for the activities of the FAA-iCMM Appraisal Method (FAM).

---

### In this chapter

The following process descriptions are provided.

ID	Activity Name	See Page
<b>2.1</b>	<b>Plan and Prepare for the Appraisal</b>	<b>2-3</b>
2.1.1	Obtain Sponsor Commitment	2-4
2.1.2	Select Appraisal Scope	2-7
2.1.3	Select Appraisal Team	2-10
2.1.4	Plan Appraisal Details	2-13
2.1.5	Orient Participants	2-17
2.1.6	Train Team	2-20
2.1.7	Administer Questionnaire	2-23
2.1.8	Develop Exploratory Questions	2-25
<b>2.2</b>	<b>Conduct Appraisal</b>	<b>2-29</b>
2.2.1	Conduct Opening Meeting	2-30
2.2.2	Conduct Interviews	2-32
2.2.3	Review Documentation	2-36
2.2.4	Consolidate Data	2-40
2.2.5	Develop Draft Findings	2-44
2.2.6	Present Draft Findings	2-47
2.2.7	Develop Ratings	2-50
2.2.8	Develop Final Briefing	2-55
2.2.9	Brief Sponsor	2-57
2.2.10	Present Final Briefing	2-60
2.2.11	Conduct Wrap-Up	2-63
<b>2.3</b>	<b>Report Results</b>	<b>2-66</b>
2.3.1	Prepare and Deliver Appraisal Report	2-67
2.3.2	Manage Records	2-69

## Chapter 2: FAM process description, continued

### Process descriptions

All activity descriptions are formatted the same, containing the paragraphs that are described in Table 2-1. Detailed guidance for how to perform the activities and training materials are provided separately.

Block Title	Description
Purpose	The purpose for this phase or activity.
Summary description	A summary of the work performed during the activity.
Entry criteria	The conditions or decision to start.
Exit criteria	A description of the decision-making criteria to determine if the phase or activity has been completed.
Roles	The roles involved in the phase or activity and a summary of their responsibilities.
Inputs	The input artifacts needed to perform the activity.
Steps	The list of steps or tasks and brief guidance to perform each step.
Outputs	The output artifacts of this phase or activity that may be checked for compliance.
Typical duration/effort	<p>The measurements collected and how to collect them as part of improvement of the process.</p> <ul style="list-style-type: none"><li>• Typical calendar duration</li><li>• Typical effort (team or staff hours to perform the activity)</li></ul> <p>Appraisal work product measurements may be collected as applicable.</p>
Notes	Notes that do not fit in any of the other categories including references, or guidance.

**Table 2-1. Process Description Format.**

## 2.1 Plan and Prepare for the Appraisal

---

### Purpose

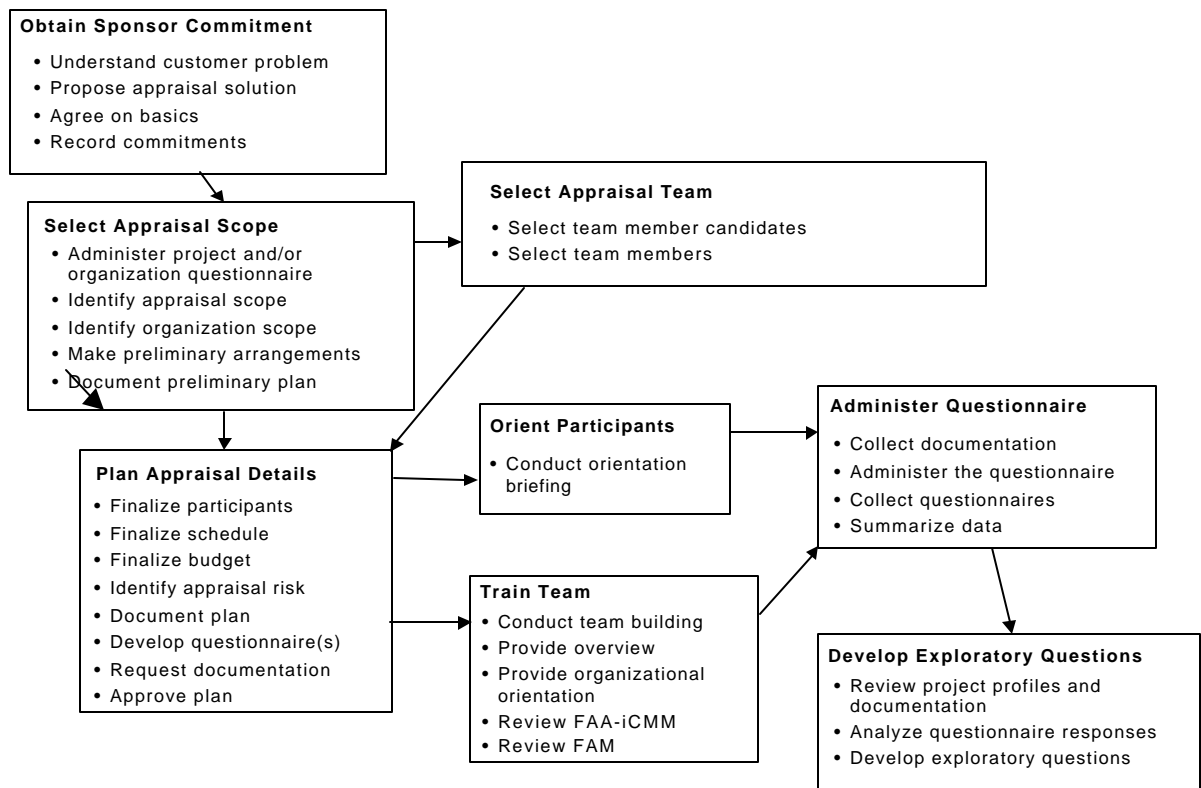
The purpose of the Plan and Prepare for the Appraisal phase is to prepare the sponsor, the appraisal team, and the organization (appraised entity) for the appraisal activities.

---

### Summary description

Plan and Prepare for the Appraisal includes activities to achieve the following

- The sponsor commits to the resource and action requirements for the appraisal
- The team and other participants are selected, trained or oriented, and committed to perform the appraisal
- The organization provides preliminary data to the team for analysis, and the team analyzes the data and prepares for the interactive data gathering, analysis, feedback, and reporting activities.



## 2.1.1 Obtain Sponsor Commitment

---

<b>Purpose</b>	The purpose of Obtain Sponsor Commitment is to establish the appraisal goals, the sponsor's commitment to funding and outcomes, and the appraisal constraints.
<b>Summary description</b>	Obtain Sponsor Commitment involves meeting with the sponsor(s) of the appraisal to identify sponsor interests and business goals and to provide an understanding of the concepts of the FAA-iCMM and the FAA-iCMM appraisal method (FAM), engaging the sponsor in dialogue to determine the goals for the appraisal and the needed resources, to include personnel and funding, for the appraisal activities. A primary outcome of obtaining sponsor commitment is assurance that the sponsor understands his/her role in the appraisal.
<b>Entry criteria</b>	<ul style="list-style-type: none"><li>• Invitation to participate in the decision to perform an appraisal</li></ul>
<b>Exit criteria</b>	<ul style="list-style-type: none"><li>• Appraisal goals established.</li><li>• Appraisal variation selected.</li><li>• Sponsor commitment to provide appraisal resources obtained.</li><li>• Sponsor commitment to appropriate behavior during the appraisal obtained.</li><li>• Appraisal team leader selected</li></ul>

---

### Roles

Table 2-2 lists the roles involved in this step.

<b>Role</b>	<b>Summary</b>
Sponsor	Engages in dialogue with appraisal team leader and/or advocate to understand appraisal context and set appraisal goals; commits resources for the appraisal. Selects/approces appraisal team leader.
Appraisal advocate	Establishes link between sponsor, appraisal team leader, and potential appraisal participants.
Appraisal team leader	Provides sponsor with information needed to make a commitment decision on the appraisal.

**Table 2-2. Participants for Obtain Sponsor Commitment.**

---

## 2.1.1 Obtain sponsor commitment, continued

---

### Inputs

- Appraisal information or presentation
  - Examples of schedules and levels of effort for appraisals
- 

### Steps

Table 2-3 shows the steps for this activity.

Step	Description
Understand the customer's problem	Identify sponsor interests and business goals that appraisal could address.
Propose appraisal solution	Brief sponsor on appraisal context in the improvement cycle, outcomes, type and tailoring options and what they provide and do not provide, approximate schedule, and expectations of the sponsor's participation.
Agree on basics	Agree on appraisal type and sponsor role, and assign the appraisal team leader, an organizational appraisal representative and a site coordinator to make arrangements.
Record commitments	Document the agreements.

**Table 2-3. Steps for Obtain Sponsor Commitment**

---

### Outputs

- Documented agreement about appraisal goals, type, funding, sponsorship for the general resources needed, and a tentative schedule for the planning and conduct of the appraisal.
- 

### Typical duration/ effort

- Typical calendar duration: Two hours to several weeks
  - Typical level of effort: 1 hour to a day
-

## 2.1.1 Obtain sponsor commitment, continued

---

### Notes

This is a go/no-go decision point. If sponsor commitment for the appraisal is not obtained, no further steps related to FAM should be performed.

The Appraisal Team Leader (ATL) is normally the person who is brought in by the appraisal advocate to initiate appraisal action. The ATL is typically an approved lead appraiser in the FAM. The sponsor typically approves the ATL selection at this time.

The Organizational Appraisal Representative (OAR) and site coordinator may be identified at this time. If not identified, the appraisal advocate can serve as the OAR until one is identified. The site coordinator may be identified at this time if necessary. However, the site coordinator is normally assigned once the appraisal period requires logistics support.

---

## 2.1.2 Select Appraisal Scope

---

**Purpose**

The purpose of Select Appraisal Scope is to establish the appraisal scope to meet the goals established with the sponsor for the appraisal.

---

**Summary description**

Select Appraisal Scope involves determining the FAA-iCMM process areas and capability levels and the set of projects to be selected from the organization. In addition, a preliminary appraisal plan is produced.

---

**Entry criteria**

- Sponsor commitment to fund and perform appraisal obtained.
- 

**Exit criteria**

- Preliminary appraisal plan developed including
    - aspects of the FAA-iCMM to be included in the appraisal
    - projects and groups to provide appraisal participants
  - OAR and site coordinator identified
- 

**Roles**

Table 2-4 lists the roles involved in this activity.

Role	Summary
Site coordinator or Organizational appraisal representative	Checks on schedules, lead times, potential participants availability constraints to establish schedule and makes tentative arrangements for the appraisal. Administers project/organization questionnaires.
Appraisal team leader	With affected management, determines the projects, process areas, and capability levels to include in the appraisal. Drafts feasible schedules to perform the appraisal and proposes one as part of the preliminary plan.
Sponsor	Provides appropriate input on organization, goals, and scope in terms of projects to include and applicable parts of the model.

**Table 2-4. Participants for Select Appraisal Scope.**

---

## 2.1.2 Select appraisal scope, continued

### Inputs

- Sponsor's appraisal and business goals (from previous activity)
- FAA-iCMM
- Organization chart
- Appraisal plan template

### Steps

Table 2-5 shows the steps for this activity.

Step	Description
Administer project and/or organization questionnaire	Collect project/organization data to help determine appraisal scope, if necessary.
Identify appraisal scope	Based on the business goals of the organization, identify the model process areas and capability levels needed, appraisal method tailoring to accomplish the appraisal goals, and life cycle coverage.
Identify organization scope	From the appraisal scope, work with the advocate or sponsor to identify the affected parts of the enterprise to be included in the appraisal, and designate those not to be included.
Make preliminary arrangements	Identify the organizational appraisal representative and site coordinator if not done in previous activity (2.1.1). Produce a list of potential participants from projects and functional groups within the organization's projects scope. Identify possible schedules and other tentative arrangements for the appraisal.
Document preliminary plan	Draft a plan for the appraisal.

**Table 2-5. Steps for Select Appraisal Scope**

## 2.1.2 Select appraisal scope, continued

---

<b>Outputs</b>	<p>Preliminary appraisal plan to include:</p> <ul style="list-style-type: none"><li>• goals</li><li>• appraisal scope description</li><li>• appraisal method</li><li>• description of entity being appraised</li><li>• tentative schedule</li><li>• estimated costs</li><li>• candidate organizational participants</li></ul>
<b>Typical duration/ effort</b>	<ul style="list-style-type: none"><li>• Typical calendar duration: One to two weeks, depending on complexity of tailoring required, and sponsor's prior experience with appraisals</li><li>• Typical level of effort: 1 to 8 staff hours</li></ul>
<b>Notes</b>	<ul style="list-style-type: none"><li>• The site coordinator performs all logistics functions. However, if a site coordinator is not identified at this time the organizational appraisal representative can perform these duties.</li><li>• Project and/or organization data collected may be used to orient appraisal team or for help in developing exploratory questions.</li></ul>

---

## 2.1.3 Select Appraisal Team

---

**Purpose** The purpose of Select Appraisal Team is to select an appraisal team with the capability and experience to conduct the appraisal.

---

**Summary description** Team members are identified, invited, and scheduled, and commit to participating in this activity.

---

**Entry criteria**

- Preliminary Appraisal Plan
- List of potential appraisal participants
- OAR, ATL and site coordinator selected

---

**Exit criteria**

- Appraisal team members selected.
- Sufficient potential participants to cover the appraisal scope identified.

---

**Roles** Table 2-6 lists the roles involved in this activity.

Role	Summary
Appraisal advocate and/or sponsor and/or Organizational appraisal representative	Provides the appraisal team leader and/or site coordinator with organization, project, and potential participant knowledge. Approves and communicates desired participants through the management chain to encourage their ability to participate.
Appraisal team leader	Guides or approves selection of team to achieve coverage of the appraisal scope.
Site coordinator	Makes contact and finds availability of potential team members, notifies them, and schedules the appraisal activities.

**Table 2-6. Participants for Select Appraisal Team.**

---

**Inputs**

- Organizational elements selected to participate in the appraisal (from previous activity)

---

### 2.1.3 Select appraisal team, continued

---

#### Steps

Table 2-7 shows the steps for this activity.

Step	Description
Identify team member candidates	Brainstorm potential team members.
Select team members	Invite candidates to serve on the team. Get agreements to serve and ensure that this will be the priority for the team members during the appraisal period. Come to agreement with the team members about the priority and need to participate in every team activity barring family emergencies. Identify individuals for team roles.

**Table 2-7. Steps for Select Appraisal Team**

---

#### Outputs

- Appraisal team member role commitments secured
  - Cross-reference matrix of potential participants by process area or project to demonstrate coverage of organization and model subset
- 

#### Typical duration/ effort

- Typical calendar duration: Site coordinator: 1-4 weeks, Others: 1-2 hours
  - Typical level of effort: 2 to 16 staff hours
-

### 2.1.3 Select appraisal team, continued

---

#### Notes

The ATL must be selected by this time if not selected during Obtain Sponsor Commitment.

Team size is typically 5 to 8 members with a minimum of 4 and a maximum of 12. This includes the appraisal team leader and organizational appraisal representative, but excludes the site coordinator who is not a team member. Team members should have at least five years of appropriate functional experience and the team should have a total of 25 or more years of total functional experience. At least one member should have at least 6 years of management experience with a total of ten years for the team. Those participating should include opinion leaders, those who will have to make the changes indicated, those who know what typically happens on, and in the organizational infrastructure that supports, projects, and those who manage projects and support groups.

Observers are not recommended, but if permitted, must be committed to non-intrusive behavior, and there should not be more than two.

More detailed definitions of desirable qualifications for the roles on an appraisal are provided in Table 1-3, Chapter 1.

---

## 2.1.4 Plan Appraisal Details

---

<b>Purpose</b>	The purpose of Plan Appraisal Details is to produce and approve an appraisal plan.
----------------	--

---

<b>Summary description</b>	Plan Appraisal Details involves filling in the details, scheduling and staffing, documenting and approval of the plan.
----------------------------	--

---

<b>Entry criteria</b>	<ul style="list-style-type: none"><li>• Appraisal scope and sufficient and appropriate staff identified.</li></ul>
-----------------------	--

---

<b>Exit criteria</b>	<ul style="list-style-type: none"><li>• Appraisal plan approved.</li></ul>
----------------------	--

---

<b>Roles</b>	Table 2-8 lists the roles involved in this activity.
--------------	--

Role	Summary
Site coordinator	Confirms logistics details for the appraisal.
Appraisal team leader	Develops plan and documentation. Leads appraisal risk assessment activities. Produces questionnaire(s).
Sponsor	Approves appraisal plan.

**Table 2-8. Participants for Plan Appraisal Details.**

---

<b>Inputs</b>	<ul style="list-style-type: none"><li>• Preliminary appraisal plan (Appraisal goals, budget, scope, and potential staffing from previous activities)</li><li>• Appraisal plan template (Toolkit)</li></ul>
---------------	--

---

*continued on next page*

## 2.1.4 Plan appraisal details, continued

### Steps

Table 2-9 shows the steps for this activity.

Step	Description
Finalize participants	Final selection of willing, available, and appropriate participants, and obtaining commitments to participate from them.
Finalize schedule	Finalizes the schedule with the participant selection and commitments, and confirm or make arrangements for workspace, supplies, support, etc.
Finalize budget	Estimate all costs of all resources.
Identify appraisal risk	The risks associated with conducting the appraisal should be identified with appropriate mitigation actions or plans.
Document plan	Document the plan.
Develop questionnaire(s)	Develop and append to the appraisal plan the master questionnaire(s) and a cover sheet describing any tailoring performed, relationship to the appraisal scope, and/or rationale for questionnaire subsets allocated to specific respondents, such as Configuration Management PA questions for a CM practitioner.
Request documentation	Identify documentation and other artifacts that demonstrate that practices in the scope of the model are being performed. Request copies from probable users. Establish the documentation library and designate a team member as data manager to manage the documentation and artifacts submitted.
Approve plan	Review, adjust, and approve plan, and communicate plan details to those affected.

**Table 2-9. Steps for Plan Appraisal Details**

## 2.1.4 Plan appraisal details, continued

---

### Outputs

- Approved appraisal plan, which includes
    - goals
    - scope of the model
    - scope of the organization (projects and functions to be included)
    - budget
    - tasks and schedule
    - team members and other participants
    - logistics including
      - meeting rooms and supplies,
      - equipment
      - support staff availability
    - identification of all appraisal reports
    - the recipients of both the oral and written appraisal reports
    - appraisal risks and mitigations
  - Questionnaire(s)
  - Documentation or artifact requests
- 

### Typical duration/ effort

- Typical calendar duration: Two to six weeks, depending on the complexity of the appraisal plan
  - Typical level of effort: 4 staff hours to a staff week
-

## 2.1.4 Plan appraisal details, continued

---

### Notes

This is when the actual schedule for the Conduct Appraisal phase is produced. See the Toolkit Appraisal Checklist for details on preparing for the logistics of an appraisal.

The questionnaire used in the appraisal is developed based on the model scope, organizational scope (projects and other participants), and background demographics that can help improve the method and model when feedback have been collected and are compared to other appraisal instances. The questionnaire typically includes

- PA goals achieved (to be answered by leads)
- PA practices performed (to be answered by practitioners)

The organization and project questionnaires typically include organization, project and infrastructure descriptions, products provided to customers, equipment (tools), geographic dispersion, and customer identification or characteristics (to be completed by an appropriate organization member).

Any useful documents, such as policies, process descriptions (often in training materials), standards, even meeting minutes or action item lists, may be requested, collected, organized, and stored by the site data manager. An example request form for such materials is in the Toolkit with the schedule forms for participants and team members.

---

## 2.1.5 Orient Participants

---

### Purpose

The purpose of Orient Participants is to prepare the appraisal participants to perform their information sharing roles, especially to make the participants as comfortable as possible with the “what, why, and how” of the appraisal process so that they will participate appropriately. This activity may be combined with or replace the opening meeting (see Activity 2.2.1).

---

### Summary description

The orientation begins with an overview of the appraisal plan including the appraisal scope, with an optional overview of the model content and structure. The what, why, and how of the appraisal, with expected outcomes, are provided along with a question and answer session. Questionnaires may be administered immediately following this activity (see Activity 2.1.7).

---

### Entry criteria

- Appraisal participants identified and invited to attend
- 

### Exit criteria

- Appraisal participants are aware of how the appraisal will be conducted, and what will be expected of them during the appraisal.
- 

### Roles

Table 2-10 lists the roles involved in this activity.

Role	Summary
Appraisal team leader	Leads the team through the model and appraisal method and answers any questions.
Organizational appraisal representative	Provides orientation on the organization and its products.
Participants	Learn model and appraisal method and receive questionnaire if provided at this time.

**Table 2-10. Participants for Orient Participants**

---

*continued on next page*

## 2.1.5 Orient participants, continued

---

### Inputs

- Appraisal plan (previous activity)
  - Template of briefing materials (tailor from Toolkit team training materials)
  - Questionnaire (see 2.1.4 and 2.1.7)
- 

### Steps

Table 2-11 shows the steps for this activity.

Step	Description
Conduct orientation briefing	Conduct the orientation briefing. The briefing includes the purpose and scope of the appraisal, typical outputs, the appraisal plan, confidentiality rules, and optionally, the model content and format.

**Table 2-11. Steps for Orient Participants**

---

### Outputs

- Briefing slides
  - Recorded questions and answers
- 

### Typical duration/ effort

- Typical calendar duration: 1-2 hours
  - Typical level of effort: 1-2 hours
-

## 2.1.5 Orient participants, continued

---

### Notes

This activity reduces participant concerns by providing open and candid descriptions of the what, how, and why of the appraisal, together with a question and answer session. The orientation is typically a 1-2 hour activity which overviews the FAA-iCMM and the appraisal method. Orientation participants include all personnel who will be involved in interviews and any personnel who are interested in appraisal findings and will be involved in post appraisal improvement activities. The orientation briefing should consider for inclusion: the purpose and objectives of the appraisal, FAA-iCMM, confidentiality rules, the activities of appraisal method, and subsequent possible activities.

This activity is especially important for organizations new to appraisals. It may be combined with or replace the Opening Meeting (see Activity 2.2.1).

The questionnaire is typically administered to designated appraisal participants immediately following this activity. See Activity 2.1.7.

---

## 2.1.6 Train Team

---

**Purpose**

The purpose of Team Training is to prepare the appraisal team to perform its role in the appraisal process.

---

**Summary description**

This is a necessity for the appraisal team to understand the FAA-iCMM, be able to perform the appraisal method, and build teamwork to enhance performance. Team training begins with one or more team-building exercises, an orientation on the organization and its products , an overview or detailed training on the model structure and content, and practice using the appraisal method techniques.

---

**Entry criteria**

- Appraisal team members identified and scheduled to attend
- 

**Exit criteria**

- Appraisal team understands use of FAA-iCMM in appraisal context.
  - Appraisal team understands how to perform their roles.
  - Appraisal team commits to perform the appraisal as structured in the appraisal plan.
- 

**Roles**

Table 2-12 lists the roles involved in this activity.

Role	Summary
Appraisal team leader	Leads the team through the model and appraisal method training and answers any questions. Ensures team is adequately trained.
Organizational appraisal representative	Provides orientation on the organization and its products.
Appraisal team members	Learn model and appraisal method, participate in team-building, and practice appraisal techniques.

**Table 2-12. Participants for Team Training**

---

## 2.1.6 Train team, continued

---

### Inputs

- Appraisal plan (previous activity)
  - Tailored method (previous activity)
  - Training materials
- 

### Steps

Table 2-13 shows the steps for this activity.

Step	Description
Conduct team-building	The appraisal team leader leads the team in a team-building exercise; at the very least, all team members introduce themselves.
Provide overview	A general overview of the model, appraisal method, confidentiality rules, and a questions and answers session for all participants may be held at the outset. This may occur as a part of the opening orientation meeting.
Provide organizational orientation	Present organizational and product overview.
Review FAA-iCMM	Present the salient features of the model and its use in appraisal and discuss them with the team.
Review FAM	Explain each step in the appraisal process. Describe the roles with particular emphasis on behavior and procedures to be used. Describe the techniques that will be used, and lead the team through exercises to practice the techniques.

**Table 2-13. Steps for Team Training**

---

### Outputs

- Team training materials (exercise outputs useful for improvements)
  - Trained Team
- 

### Typical duration/ effort

- Typical calendar duration: 3 days
- Typical level of effort: 3 team days

## 2.1.6 Train team, continued

---

### Notes

This step ensures that the appraisal team understands the basic flow of the appraisal activities and their responsibilities throughout the Conduct Appraisal, Report Results, and Post-Appraisal phases. See the Toolkit for training support materials and tools such as the Appraisal Checklist.

---

## 2.1.7 Administer Questionnaire

---

**Purpose** The purpose of Administer Questionnaire is to collect data on the practices and goal achievement of the organization and demographics that might affect organizational performance.

---

**Summary description** Administer Questionnaire involves administering and collecting questionnaires, summarizing results from the questionnaires, and collecting documentation and artifacts that demonstrate that the organization is performing practices. The questionnaire may be administered as part of the orientation of participants who will be involved in the appraisal in Section 2.1.5, but must be done before developing exploratory questions (Section 2.1.8).

---

**Entry criteria**

- Appropriate questionnaires developed

---

**Exit criteria**

- Project profile information recorded.
- Filled-in questionnaires recorded.
- Documentation received and filed

---

**Roles** Table 2-14 lists the roles involved in this activity.

Role	Summary
Appraisal participants selected to complete a questionnaire	Provide data on projects and the organization via questionnaires.
Organization appraisal representative or Site Coordinator	Arranges questionnaire administration, and collects any documentation.
Appraisal team leader or Organization appraisal representative	Conducts the questionnaire administration. Answers respondents' questions.
Data Manager	Organizes documentation.

**Table 2-14. Participants for Administer Questionnaire.**

## 2.1.7 Administer Questionnaire, continued

---

### Inputs

- Questionnaires (QBA, organizational, project)
  - Questionnaire instructions
  - Data recording and summarizing tool
- 

### Steps

Table 2-15 shows the steps for this activity.

Step	Description
Collect documentation	Collect identified documentation from project contacts.
Administer the questionnaire	Distribute the questionnaire to all designated participants for completion.
Collect questionnaires	Collect the questionnaires and secure them.
Summarize data	Transcribe or summarize the questionnaire data onto the summary medium. Examine and summarize practice or goal evidence from documentation review on the summary medium.

**Table 2-15. Steps for Administer Questionnaire.**

---

### Outputs

- Questionnaire responses
  - Summarized questionnaire and documentation review data
- 

### Typical duration/ effort

- Typical calendar duration: 1-5 days
  - Typical level of effort: 1-4 participant hours plus 4-8 site coordinator hours
-

## 2.1.7 Administer Questionnaire, continued

---

### Notes

The questionnaire covers the practices of the FAA-iCMM. Its results are used to focus interview data gathering during the appraisal.

The questionnaires may be administered in various ways:

- during the orientation meeting
  - during one or more face-to-face meetings
  - electronically
  - by fax response
  - mail-ins
-

## 2.1.8 Develop Exploratory Questions

---

**Purpose** The purpose of Develop Exploratory Questions is to prepare the exploratory questions for use in the data gathering interviews conducted during the appraisal process.

---

**Summary description** First, an analysis of the questionnaires is performed, based on the scope of the appraisal and other factors such as the expected maturity level of the organization. Questions are developed to facilitate the appraisal team in the data gathering (interview and document review process). The questions are targeted towards the level and area of responsibility of the participants. Training materials, or project-specific data such as plans, meeting agendas, or action item lists that have been collected may be reviewed and used to support exploratory question development and corroborate questionnaire answers.

---

**Entry criteria**

- Questionnaire responses summarized
- Documentation received.

---

**Exit criteria**

- Exploratory questions and data requests are prepared for each process area and interview session.

---

**Roles** Table 2-16 lists the roles involved in this activity.

Role	Summary
Appraisal team leader	Leads the team in the process. Provides guidance in the analysis of the questionnaires and formulation of exploratory questions.
Organization appraisal representative	Translates model jargon to site terms and concepts in the exploratory questions.
Appraisal team	Develops and agrees upon a set of initial questions and follow-up questions for the data gathering process. Also prepares "listen fors" for use during interview sessions.

**Table 2-16. Participants for Develop Exploratory Questions.**

## 2.1.8 Develop exploratory questions, continued

---

### Inputs

- Template for Exploratory Questions (Toolkit)
  - Example Exploratory Questions worksheets by PA (Toolkit)
  - Summarized questionnaire data
  - Summarized documentation review data
- 

### Steps

Table 2-17 shows the steps for this activity.

Step	Description
Review project profiles and documentation	The project profiles that were collected during the orientation process are reviewed. The appraisal team reviews documentation that may have been requested or provided to the team.
Analyze questionnaire responses	The appraisal team reviews the questionnaires in preparation for developing questions. The questions are reviewed based on the scope of the appraisal and organizational factors such as level of maturity.
Develop exploratory questions	The appraisal team generates exploratory questions and “listen fors” for each PA sorted by interview session. Lead-in questions for each interview session should be identified. Once the questions are developed they should be transcribed into an appropriate form, and copies should be made for each team member.

**Table 2-17. Steps for Develop Exploratory Questions.**

---

### Outputs

- Documented exploratory questions and “listen fors” by PA or interview session
- 

*continued on next page*

## 2.1.8 Develop exploratory questions, continued

---

**Typical duration/  
effort**

- Typical calendar duration: 1 - 4 hours
  - Typical level of effort: 1 - 4 team hours
- 

**Notes**

The develop exploratory questions process should be conducted before the on-site period. A team may request and use program documentation to aid the process to develop exploratory questions. Open-ended questions should also be developed.

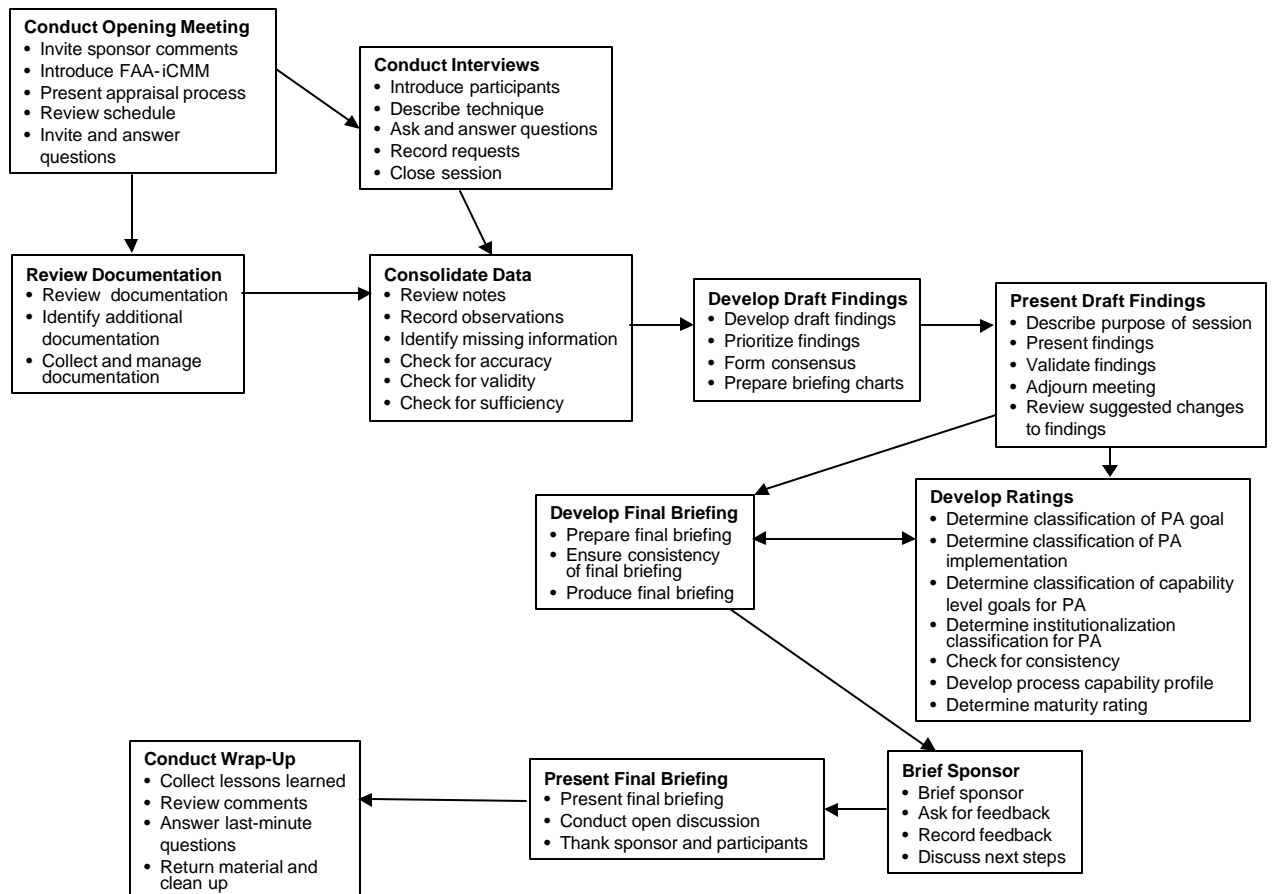
## 2.2 Conduct Appraisal

### Purpose

The purposes of the Conduct Appraisal phase are to obtain data about the entity being appraised, consolidate that data, develop ratings and present appraisal findings.

### Summary description

Conduct Appraisal includes 11 activities as depicted below.



## 2.2.1 Conduct Opening Meeting

---

**Purpose** The purposes of Conduct Opening Meeting are to describe the appraisal process to the sponsor and all appraisal participants, to review the appraisal schedule for them, and to give the sponsor an opportunity to express support for the appraisal activities.

---

**Summary description** Conduct Opening Meeting involves gathering all the appraisal participants together, along with the sponsor or customer of the appraisal (depending on appraisal context), to describe the appraisal process, review the appraisal schedule, and publicly affirm the sponsor's commitment to the appraisal and the subsequent process improvement activities.

---

**Entry criteria**

- Completed Appraisal Plan and decision to proceed with appraisal

---

**Exit criteria**

- Opening briefing delivered.
- Questions of appraisal participants answered.

---

**Roles** Table 2-18 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Organization appraisal representative	Welcomes participants and introduces sponsor and appraisal team leader.
Sponsor	Shows management support for the appraisal and subsequent process improvement activities. Encourages active involvement by appraisal participants.
Appraisal team leader	Presents brief overview of the model and appraisal process.
Site coordinator	Presents schedules and locations.
Appraisal team	Supports appraisal team leader.
Appraisal participants	Learn their role(s) in appraisal activities.

**Table 2-18. Participants for Conduct Opening Meeting.**

## 2.2.1 Conduct Opening Meeting, Continued

---

**Input(s)**

Appraisal Plan

---

**Steps**

Table 2-19 shows the steps for this process element.

Step	Description
Invite sponsor comments	The sponsor expresses support for the appraisal and commitment to the resulting process improvement recommendations. The sponsor indicates how the results of the appraisal will be used to accomplish improvement.
Introduce FAA-iCMM	The briefing includes an introduction to and description of the FAA-iCMM.
Present appraisal process	An overview of the appraisal process is given. Confidentiality rules are explained.
Review schedule	The site coordinator reviews the schedule and locations for the appraisal activities and stresses the necessity of being on time.
Invite and answer questions	The sponsor, appraisal team leader, and organizational appraisal representative answer any questions from the appraisal participants.

**Table 2-19. Steps for Conduct Opening Meeting.**

---

**Outputs**

- Participants ready for appraisal
- 

**Typical duration/  
effort**

Typical calendar duration: 1.5 hrs  
Typical level of effort: 1.5 hrs for each participant and team member

---

**Notes**

Refer to Appraisal Tool Kit, for a sample opening briefing.

The appraisal goals and use of results are established in the preparation phase as part of Select Appraisal Scope.

## 2.2.2 Conduct Interviews

---

<b>Purpose</b>	The purpose of Conduct Interviews is to gather data from appraisal participants, and to understand process implementation issues not resolvable during documentation reviews.
<b>Summary description</b>	The Appraisal Team Leader will determine the mix of interview session (individual or group) appropriate for the information needed. The rules of confidentiality should be communicated to all interview participants. Individual interviews will promote, to the maximum extent possible, open discussion. Group interviews, although structured, are to be conducted as open forums for discussion. The group style of interview session provides for appropriate representation to avoid misunderstandings and mistakes.
<b>Entry criteria</b>	<ul style="list-style-type: none"><li>• Exploratory question sets have been scripted.</li><li>• Interviews have been planned and scheduled.</li></ul>
<b>Exit criteria</b>	<ul style="list-style-type: none"><li>• An understanding of each interviewee's perspective of project and organizational processes.</li><li>• All documents identified during the interview sessions have been requested.</li><li>• All process areas within the scope of the appraisal have been addressed by participants with appropriate knowledge of processes and practices.</li></ul>

---

*Continued on next page*

## 2.2.2 Conduct Interviews, Continued

### Roles

Table 2-20 lists the principle roles involved in this process element, and a summary of their activities.

Role	Summary
Appraisal team leader (or appraisal team member if designated)	Leads the interview session, ensuring the correct person (interviewer) is conducting the interview. Ensures that the key exploratory questions are addressed.
Organization appraisal representative or Site coordinator	Ensures attendance of the participants.
Appraisal team	Takes notes during interviews. Notes artifacts and documents mentioned during the interview. Asks questions to seek additional information, or clear up ambiguity.
Data Manager	Makes a list of artifacts and documents requested by the Appraisal team leader, or other team member. Provides the interviewee, and organization appraisal representative or Site coordinator, with a copy subsequent to the session. Keeps track of items requested, received, and returned by the appraisal team.
Timekeeper	Ensures compliance with time constraints.
Interviewee or Group	Provide the appraisal team with knowledge of process. Discuss practices performed. Provide the appraisal team with samples of the work products which support process claims.

**Table 2-20. Participants for Conduct Interviews**

### Inputs

- Exploratory question sets (from Activity 2.1.7 or templates from the Tool Kit)
- Session checklists for the facilitator/moderator

*Continued on next page*

## 2.2.2 Conduct Interviews, Continued

### Steps

Table 2-21 shows the steps for this activity.

Step	Description
Introduce participants	The ATL welcomes the individual or group, and explains the purpose of the interview session. The appraisal team, and interviewees introduce themselves.
Describe technique	The rules of confidentiality are reinforced, and the procedure for the structured interview is described to the interviewees.
Ask and answer questions	The interviewer begins with the exploratory questions. Members of the appraisal team should take notes and ask questions as appropriate. Strict adherence to time constraints is of paramount importance.
Record requests	The data manager records any requests of the appraisal team for documentation, or other data. Follow-up is necessary to ensure that the items are received.
Close Session	The ATL draws the dialogue to a close, thanks the participant(s) and reminds them of the confidentiality rules, and data requests made by the appraisal team. A small amount of time should be afforded the interviewee for questions of the appraisal team, or to offer key information that may have been overlooked.

**Table 2-21. Steps for Conduct Interviews**

### Outputs

- Interview notes
- List of various artifacts requested during the interview sessions

### Typical duration/ effort

- Calendar: 1-4 days
- Effort: Leads: 1 group or 3-5 individual lead interviews  
Practitioners: 1-5 groups or 8-10 individual practitioner interviews  
1-1.5 team hours per individual interview  
1.5-2 team hours per group interview

*Continued on next page*

## 2.2.2 Conduct Interviews, Continued

---

### Notes

The ATL guides the interviewees through the data collection process. A checklist for this work is in the toolkit, Training Support Materials. The keys to success are building understanding -- the participants feel that what they provide is useful and comprehended by the appraisal team. To that end, it is recommended that the team apply active listening practices (eye contact, head nods, etc.), while ensuring that all of the critical questions are asked.

Open-ended questions such as “If you could change anything to improve quality, what would it be?” or “Identify a strength of your organization” should be asked when closing the session.

Typically, technical or project leads are interviewed individually; practitioners or organization managers are interviewed as a group.

The use of “mini teams” and parallel interviews may be required to complete the activity within the time constraints. The Appraisal Team Leader will designate the leaders for “mini teams”.

---

## 2.2.3 Review Documentation

---

**Purpose**

The purposes of Review Documentation are to review documentation collected during previous steps in the appraisal process, to identify additional organization or project documentation relevant to the appraisal, and to use such documentation as part of the data gathering aspect of the appraisal.

---

**Summary description**

The appraisal team members identify any additional documentation needed by the appraisal team. The requested documentation is collected for review. The data manager keeps track of all documentation provided by the organization being appraised. The appraisal team reviews documentation for data/information to support the appraisal process.

---

**Entry Criteria**

- Documentation received
- 

**Exit criteria**

- No additional documentation needed
-

## 2.2.3 Review Documentation, Continued

### Roles

Table 2-22 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Appraisal team	Identifies any additional documentation needed. Independently/individually reviews documentation and takes notes/makes observations while engaged in review of documentation.
Site coordinator	Assists appraisal team by arranging for space to store documentation and conduct documentation review. Locates and collects documentation needed by the appraisal team
Appraisal team leader	Keeps documentation review progressing according to appraisal activities schedule.
Data manager	Maintains accountability of documentation for the appraisal team.

**Table 2-22. Participants for Review Documentation**

*continued on next page*

## 2.2.3 Review Documentation, Continued

---

**Inputs**

- Relevant project, program, and organization documents.
- 

**Steps**

Table 2-23 shows the steps for this process element.

Step	Description
Review documentation	The appraisal team reviews documentation already collected and takes notes/makes observations as appropriate.
Identify additional documentation.	Based on data gathered during individual interviews, group sessions, or documentation review, appraisal team identifies necessary supplemental documentation.
Collect and manage documentation	Documentation is located, collected, logged and tracked.

**Table 2-23. Steps for Review Documentation**

---

**Output(s)**

- Notes and observations from reviewed documentation.
- 

**Typical duration/  
effort**

Calendar: 1-3 days  
Effort: 4-8 team hours

---

*continued on next page*

### 2.2.3 Review Documentation, Continued

---

**Notes**

The Review Documentation steps may be repeated if additional documentation is identified by appraisal team members during a review step. Documentation review can also precede the development of exploratory questions prior to interviews. A team may request and use documentation generated for or by a process area to demonstrate a capability level.

---

## 2.2.4 Consolidate Data

---

### Purpose

The purpose of Consolidate Data is to consolidate the notes taken during the individual interviews, group interviews, and the documentation reviews.

---

### Summary description

Consolidate Data involves consolidating notes into observations to reflect the information gained in the individual interviews, group interviews, and document reviews. This phase should be performed multiple times, typically at the conclusion of each data collection session. It also allows the members of the appraisal team to verify their understanding of the information obtained with the other team members. Finally, this data consolidation step allows the team to strategize any needed changes in the data gathering events.

---

### Entry criteria

- At least one interview session has concluded.
- 

### Exit criteria

- Team members agree that sufficient coverage of appraisal scope has been obtained.
- 

### Roles

Table 2-24 lists the roles involved in this activity.

Role	Summary
Appraisal Team Leader	Provides guidance and model expertise for the team's deliberations.
Appraisal team	Discusses any issues; formulates observations; ensures that they meet the consolidation requirements of accuracy, validity, and sufficiency; and approves observations by consensus.

**Table 2-24. Participants for Consolidate Data.**

---

### Inputs

- Notes from interview sessions
  - Observations from document review.
-

## 2.2.4 Consolidate data, continued

### Steps

Table 2-25 shows the steps for this activity.

Step	Description
Review notes	Each team member privately reviews his/her notes from the data collection session.
Record observations	Each team member creates observations from their notes. Each observation should include: a link to the FAA-iCMM PA/BP/GP if applicable; indication that it is a strength, weakness, or alternative practice; session(s) observation was collected; and identification of the team member recording the observation.
Identify missing information	As missing information is identified, the need is documented and the appraisal strategy is modified as required.
Check for accuracy	<p>Team members will ensure that the observation is accurate. The appraisal team as a whole will then review the proposed observation. Accuracy includes all of the following:</p> <ul style="list-style-type: none"><li>• <b>Worded correctly</b> (e.g., clear, does not use absolutes, expressed in site terms, and non-attributable)</li><li>• <b>Based on information provided</b> and documented in notes</li><li>• <b>Relevant</b> by determining that it can be mapped to the FAA-iCMM or otherwise has a significant impact on the organization's process capability</li><li>• <b>Significant</b> by determining that it can be classified as evidence of strength, weakness, or acceptable alternative practices</li><li>• <b>Not redundant with other observations</b></li></ul>

## 2.2.4 Consolidate data, continued

Step	Description
Check for validity	<p>The appraisal team will ensure that the observation is valid. Validity includes:</p> <ul style="list-style-type: none"><li>• <b>Accurate</b> using the criteria described above</li><li>• <b>Corroborated</b> -<ul style="list-style-type: none"><li>* Based on data from at least two independent sources, e.g., two separate people or a person and a document</li><li>* Based on data obtained during at least two different data gathering sessions</li><li>* Strengths and alternative practices confirmed by at least one source that indicates actual practice</li></ul></li><li>• <b>Consistent</b> with other validated observations (does not include weaknesses that conflict with evidence of strengths or acceptable alternatives)</li></ul>
Check for sufficiency	<p>The appraisal team will ensure that the set of observations for a goal is sufficient. Sufficiency indicates that data were collected during the assessment to cover the appraisal scope:</p> <ul style="list-style-type: none"><li>• the organizational scope of the appraisal</li><li>• the full life cycle within scope of the appraisal</li><li>• the FAA-iCMM components within scope of the appraisal<ul style="list-style-type: none"><li>* observations cover each BP</li><li>* observations cover each GP</li></ul></li></ul> <p>Sufficiency also requires that a document indicating the work is performed has been examined for each goal within the scope of the appraisal.</p>

Table 2-25. Steps for Consolidate Data

### 2.2.4 Consolidate data, continued

---

<b>Outputs</b>	<ul style="list-style-type: none"><li>• Summarized, valid, accurate, and corroborated observations recorded by process area.</li></ul>
<b>Typical duration/ effort</b>	Typical duration: Four to eight hours total during the data gathering (4 days) Typical level of effort: 8 or more team hours
<b>Notes</b>	If sufficiency is not attainable in a reasonable amount of time, this goal will be “not rated” (see 2.2.7). This is detailed work and tends to be exhausting.

---

## 2.2.5 Develop Draft Findings

---

**Purpose** The purpose of Develop Draft Findings is to develop findings for each process area investigated in the appraisal.

---

**Summary description** Develop Draft Findings involves analyzing the consolidated observations and synthesizing them into a manageable set for incorporation into the final briefing.

---

**Entry criteria**

- Data has been consolidated
- Team consensus that sufficient coverage has been obtained

---

**Exit criteria**

- Consensus is obtained on draft findings.
- Draft findings briefing is developed.

---

**Roles** Table 2-26 lists the roles involved in this activity.

Role	Summary
Appraisal team leader	Provides expertise on the FAA-iCMM and the appraisal method and guides the team in forming consensus.
Appraisal team	Develops draft findings Achieves consensus

**Table 2-26. Participants for Develop Draft Findings.**

---

## 2.2.5 Develop Draft Findings, continued

---

### Inputs

- Consolidated data
  - Template for findings
- 

### Steps

Table 2-27 shows the steps for this activity.

Step	Description
Develop draft findings	Review the observations. Identify those major issues for each PA that need to be presented to the appraised organization. There are sometimes local issues that must be addressed if the appraisal is to have credibility with the participants. These may be identified as non-FAA-iCMM or cultural findings. Craft well-worded findings. Mini-teams typically develop these draft findings.
Prioritize findings	Prioritization is based on business goals, if available, or on the team's consensus on the major barriers to improvement in the organization.
Form consensus	Each finding is presented to the team for final edit and approval. The team <i>must</i> agree to support each finding.  This step continues until consensus is achieved. If consensus is not achieved the finding should not be used.
Prepare briefing charts	The findings are placed on briefing charts for presentation. See the Toolkit for a sample of the findings presentation slides.

**Table 2-27. Steps for Develop Draft Findings**

---

### Outputs

- Draft findings
- 

### Typical duration/ effort

Typical duration: Four to eight hours  
Typical level of effort: 4 - 8 team hours

---

## 2.2.5 Develop Draft Findings, continued

---

### Notes

A finding is:

- Worded correctly (clear, does not use absolutes, expressed in site terms, and non-attributable to person or project)
- A group of observations, either strengths or weaknesses.

If team members leave the appraisal without full commitment to all of the findings, the other participants will sense the lack of consensus and interpret it as a weakness in the findings.

---

## 2.2.6 Present Draft Findings

---

### Purpose

The purpose of Present Draft Findings is for the team to validate with the participants that the synthesized findings represent the information provided during data gathering. This session is important in establishing the credibility of the appraisal with the participants and for providing momentum toward change.

---

### Summary description

Present Draft Findings involves presenting the synthesized findings to the managers as a group, and to all the practitioners as a group. This provides the opportunity for participants to provide feedback on the validity of the information. Generally all managers and strong opinion leaders are grouped in one group, with the other participants in the other group. The team later revises findings, if appropriate.

---

### Entry Criteria

- Draft findings slides prepared
- 

### Exit Criteria

- Presentation of draft findings complete.
  - Participant comments recorded and findings are updated.
- 

### Roles

Table 2-28 lists the roles involved in this activity.

Role	Summary
Appraisal team leader or OAR	Presents the draft findings. Solicits comments from participants. Facilitates the feedback portion of the meeting.
Appraisal team	Observes reactions of participants to findings, and takes notes on the feedback. Modify findings as needed and come to consensus on the findings.
Appraisal participants	Listen to findings presentation; provide feedback on whether the appraisal team captured what is happening in the organization. Offer improvements.

**Table 2-28. Participants for Present Draft Findings.**

---

### Inputs

- Draft findings slides (from activity 2.2.5)

## 2.2.6 Present Draft Findings, continued

### Steps

Table 2-29 shows the steps for this activity.

Step	Description
Describe purpose of session	Re-emphasize that the goal of the appraisal is to capture the "state of the practice" in the appraised entity; this session allows the appraisal team to validate that they have accurately captured the viewpoint of the participants. No copy of the briefing should be passed out at this time. No note taking is allowed by the participants.
Present findings	Present the findings portion of the briefing. During this briefing, observe the reactions to the findings.
Validate findings	After the run-through of the findings, solicit feedback from the practitioners, e.g., "Is this what you told us and is this worded in a way to get positive action from management?" Lead the discussion. When changes are proposed, no commitment to change is made, but the comment is simply recorded.
Adjourn meeting	Remind participants of the time for the final findings briefing and emphasize that this is an opportunity to interact with the management who sponsored the appraisal.
Review suggested changes to findings	Not all requested changes will be accepted, particularly, ones that do not add to the critical issues of the appraisal. The information received in the Draft Findings session will be treated as data obtained from another data collection session. The team must come to consensus on the changes before they are made.

**Table 2-29. Steps for Present Draft Findings**

### Outputs

- Notes by team
- Revised findings

### 2.2.6 Present Draft Findings, continued

---

**Typical duration/  
effort**

Typical duration: One hour for each presentation; two hours to update findings.  
Typical level of effort: Four team hours plus 1 participants' hour

---

**Notes**

Feedback helps to validate and gather consensus of the need for change.

Ask the participants to keep draft findings to themselves until after the final findings briefing. This gives sponsors a chance to respond to the draft findings.

---

## 2.2.7 Develop Ratings

---

### Purpose

The purpose of Develop Ratings is to develop the process capability profile and to determine a maturity rating.

---

### Summary description

Develop Ratings involves the appraisal team coming to consensus on the process capability profile and the maturity rating. The capability rating of each PA is determined by coming to consensus on the extent to which the appraised organization meets the goals of each process area and capability level within scope of the assessment. These capability ratings together constitute the process capability profile. The maturity rating can then be derived from the profile.

---

### Entry criteria

- Updated findings
- 

### Exit criteria

- Process capability profile is finalized.
  - Maturity rating is finalized.
- 

### Roles

Table 2-30 lists the roles involved in this activity.

Role	Summary
Appraisal team	Develops and comes to consensus on the process capability profile and maturity rating.

**Table 2-30. Participants for Develop Ratings.**

---

### Inputs

- Observations
  - Updated findings
-

## 2.2.7 Develop Ratings, continued

### Steps

Table 2-31 shows the steps for this activity.

Step	Description
Determine classification of PA goal	<p>Review each goal for each PA and classify that goal as:</p> <ul style="list-style-type: none"><li>• <b>Not Rated</b> - The appraisal findings do not sufficiently cover the goal (as defined in section 2.2.4) or the goal falls outside the scope of the appraisal.</li><li>• <b>Not Applicable</b> - The FAA-iCMM goal is not applicable to the organization's environment.</li><li>• <b>Satisfied</b> - The base practices associated with the PA goal are performed as defined in the FAA-iCMM or with adequate alternative practices. There must be no significant weaknesses.</li><li>• <b>Unsatisfied</b> - There are significant weaknesses in the performance of the base practices associated with the goal, and no adequate alternatives in place.</li></ul>
Determine classification of PA implementation	<p>Review the PA goal classifications for each PA and classify that PA as:</p> <ul style="list-style-type: none"><li>• <b>Not Rated</b> – At least one goal for the PA is classified as Not Rated.</li><li>• <b>Not Applicable</b> – All goals for the PA are classified as Not Applicable.</li><li>• <b>Implemented</b> – All goals are classified as Satisfied or at least one goal is classified as Satisfied with all other goals classified as Not Applicable.</li><li>• <b>Not implemented</b> – All goals are rated and at least one goal is classified as Unsatisfied.</li></ul>

## 2.2.7 Develop Ratings, continued

Determine classification of capability level goals for PA	<p>For each implemented PA, review each capability level goal and classify that goal as:</p> <ul style="list-style-type: none"><li>• <b>Not Rated</b> - The appraisal findings do not sufficiently cover the goal (as defined in section 2.2.5) or the goal falls outside the scope of the appraisal.</li><li>• <b>Satisfied</b> - The generic practices associated with that capability level goal are performed as defined in the FAA-iCMM or with adequate alternative practices. There must be no significant weaknesses.</li><li>• <b>Unsatisfied</b> - There are significant weaknesses in the performance of the generic practices associated with that capability level goal, and no adequate alternatives in place.</li></ul>
Determine institutionalization classification (capability level) for PA	<p>Review each PA's implementation classification and its capability level goal classification and classify the PA as:</p> <ul style="list-style-type: none"><li>• <b>Not Rated</b> - The PA implementation classification is Not Rated. No capability level is assigned; the PA is classified as Not Rated (NR).</li><li>• <b>Not Applicable</b> - The PA implementation classification is Not Applicable. No capability level is assigned; the PA is classified as Not Applicable (NA)</li><li>• <b>Institutionalized at level X</b> - The PA implementation classification is Implemented and the PA capability level goals up to and including level X are satisfied. If the PA is Implemented but the Level 2 capability level goal is Unsatisfied or Not Rated, then the PA is determined to be Implemented (Level 1). If the PA is Not Implemented then no capability level is assigned; the PA is classified as Not Implemented (NI).</li></ul>

## 2.2.7 Develop Ratings, continued

---

Check for consistency	The capability rating is compared with the strengths and weaknesses of each PA (including global strengths and weaknesses) to insure consistency.
Develop Process Capability Profile	The process capability profile is determined by charting each PA capability level (1-5) or classification.
Determine Maturity Rating	All PAs associated with a maturity level and all PAs assigned a lower maturity level must be Institutionalized at that level (or higher), or classified as “Not Applicable.” This will result in a single Maturity Rating for the appraised entity (1-5).

**Table 2-31. Steps for Develop Ratings**

---

### Outputs

- Organization profile and project profile, as appropriate
- Maturity level rating

---

### Typical duration/ effort

Typical duration: Two to four hours  
Typical level of effort: 2-4 team hours

## 2.2.7 Develop Ratings, continued

---

### Notes

- Note that the structure of the FAA-iCMM is such that base practices are mapped to PA Implementation Goals, and generic practices are mapped to Capability Level (Institutionalization) Goals. The FAA-iCMM Appraisal Method develops ratings consistently regarding both aspects of the model.
  - Develop Ratings is performed simultaneously with the last step of Present Draft Findings and the first step of Develop Final Briefing. A typical scenario would be to develop final findings, ratings, summaries, recommendations, and come to consensus in an iterative fashion.
  - The term “rated” is used to define a PA that does not have the classification of “Not Rated”.
  - A PA must be found to be Implemented if the findings indicate that the organization implements all related practices or acceptable alternatives to related practices.
  - An implemented PA must be found to be Institutionalized at a given level if the findings indicate that the organization implements all related generic practices or acceptable alternatives to related generic practices.
  - A PA cannot be Institutionalized at a specific level unless the findings indicate that the process is institutionalized and has been in place for a satisfactory period of time.
-

## 2.2.8 Develop Final Briefing

---

**Purpose** The purpose of Develop Final Briefing is to prepare the final briefing to the sponsor and participants.

---

**Summary description** Develop Final Briefing involves the appraisal team coming to consensus on the final briefing.

---

**Roles** Table 2-32 lists the roles involved in this activity.

Role	Summary
Appraisal team	Makes changes to the briefing if needed and comes to consensus on them. Provides global, cultural, and other non-FAA-iCMM finding slides as well as the beginning and closing part of the briefing. Prepares slides and enough copies of the final briefing for the sponsor and the appraisal team, plus a few extras in case the sponsor wants extras for his/her own distribution.

**Table 2-32. Participants for Develop Final Briefing**

---

**Inputs**

- Process capability profile (from activity 2.2.7)
- Maturity level rating (from activity 2.2.7)
- Validated, updated findings (from activity 2.2.6)
- Template for presentation (Toolkit)
- Checklist for the activity

---

## 2.2.8 Develop Final Briefing, continued

### Steps

Table 2-33 shows the steps for this activity.

Step	Description
Prepare final briefing	The appraisal team develops, reviews, modifies, and comes to consensus on all parts of the briefing. This includes: <ul style="list-style-type: none"><li>• Opening and closing</li><li>• PA findings and ratings</li><li>• Next steps</li><li>• Findings found across many PAs that are identified as “global” findings.</li><li>• Non-FAA-iCMM findings regarding the culture that are identified as “cultural” findings.</li><li>• Other non-FAA-iCMM findings</li><li>• PA “Summaries”, and “Recommended Actions.” The recommended actions should address weaknesses.</li></ul>
Ensure consistency of final briefing	Ensure that there is no conflict and that the final briefing is consistent.
Produce final briefing	Create the final charts, and copies of the briefing.

**Table 2-33. Steps for Develop Final Briefing.**

### Outputs

- Final briefing is prepared for delivery to participants.

### Typical duration/ effort

Typical duration: 1-4 hours  
Typical level of effort: 1-4 team hours

### Notes

Be sure the presenter(s) are comfortable delivering the briefing and that the whole team supports the results.

## 2.2.9 Brief Sponsor

---

**Purpose** The purposes of Brief Sponsor are to provide the sponsor with an opportunity to see results and findings and to ask questions privately, to obtain or provide feedback on the appraisal process, and to discuss next steps in more detail.

---

**Summary description** Brief Sponsor involves the appraisal team members and sponsor having an open discussion on the results of the appraisal, the appraisal process, and/or the next steps, as appropriate. All confidentiality rules are still in effect for this meeting. No results or findings are changed as a result of this meeting with the sponsor, but the sponsor is the first to see them so that the final briefing session is not a surprise.

---

**Entry Criteria** Appraisal findings completed and process capability profile developed.

---

**Exit criteria** • Sponsor is briefed on appraisal results.

---

**Roles** Table 2-34 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Appraisal team leader or organization appraisal representative	Asks sponsor if any clarification or other information is needed, suggests follow-on activities or assignments. Reaffirms confidentiality of participants responses and comments.
Appraisal team	Answer sponsor's questions, as appropriate.
Sponsor	Asks any questions not appropriate for a general audience; makes follow-up assignments.

**Table 2-34. Participants for Brief Sponsor.**

---

## 2.2.9 Brief Sponsor, Continued

---

**Input(s)**

Final briefing.

---

**Steps**

Table 2-35 shows the steps for this process element.

Step	Description
Brief sponsor	Present results and findings to sponsor and review highlights of appraisal activities. Thank sponsor for providing appraisal opportunity. Reaffirm confidentiality.  Reassert need for sponsor to attend final briefing and to speak to appraisal participants.
Ask for feedback	Often the sponsor has questions of clarification that he/she prefers not to ask in a large group; even if there are no specific questions, this is a good time to gauge the sponsor's reaction – sometimes the results are right in line with the sponsor's prior thinking, sometimes they are a surprise.
Record feedback	Any feedback from the sponsor on the appraisal process should be noted on a form and included in the lessons learned that are returned to the FAA-iCMM organization maintenance site.
Discuss next steps	At this point the assignments for follow-on work should be finalized. The briefer may provide some advice on how long the follow-up activities will be expected to take and the level of commitment required to finish the report and start to develop an improvement plan. Remind sponsor to take responsibility for improvement and to address follow-on actions

**Table 2-35. Steps for Brief Sponsor.**

---

## 2.2.9 Brief Sponsor, Continued

---

<b>Output(s)</b>	<ul style="list-style-type: none"><li>• Affirmation of appraisal results by sponsor.</li></ul>
<b>Typical duration/ effort</b>	Thirty minutes to one hour for sponsor and team.
<b>Notes</b>	<p>This is an optional step, but is frequently used as a way to ensure sponsor follow-through and assignment of actions. It also provides the sponsor with an opportunity to see results and findings (privately) and to get a better understanding of the findings so that he/she may be more comfortable discussing the appraisal results and findings in front of or among the appraisal participants at the final briefing.</p> <p>Attendance at a sponsor briefing may be limited, for example to the ATL and OAR, based on sponsor's preference.</p>

---

## 2.2.10 Present Final Briefing

---

<b>Purpose</b>	The purposes of Present Final Briefing are to present the appraisal results and findings to the organization's appraisal participants, to provide the sponsor with an opportunity to reaffirm support for the appraisal process and the associated results and findings, and to discuss follow-on activities which address the results and findings. (e.g., catalyst for process improvement effort).
<b>Summary description</b>	Present Final Briefing involves presenting the results of the appraisal to the appraisal participants and to the sponsor via a briefing that synthesizes the results and findings in a non-attributable form. Note that the sponsor may have already been briefed in private on the appraisal results and findings, but now has an opportunity to publicly reaffirm his/her support for the efforts of the appraisal team and to thank his/her organization's participants for their effort and support.
<b>Entry Criteria</b>	Complete set of final briefing charts/slides and other materials.
<b>Exit criteria</b>	<ul style="list-style-type: none"><li>• Final briefing presentation completed.</li><li>• Participant questions answered, or recorded as actions.</li></ul>

---

## 2.2.10 Present Final Briefing, continued

### Roles

Table 2-36 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Appraisal team leader or organization appraisal representative	Presents the final briefing.
Appraisal team	Notes feedback from participants and sponsor.
Sponsor	Receives appraisal results and findings from team; reaffirms support for the effort; discusses actions to be taken based on appraisal results.
Appraisal participants	Listen to appraisal results and provide recommendations to sponsor where appropriate.

**Table 2-36. Participants for Present Final Briefing.**

### Input(s)

Appraisal findings and process capability profile

## 2.2.10 Present Final Briefing, Continued

### Steps

Table 2-37 shows the steps for this process element.

Step	Description
Present final briefing	The presenter goes through the entire briefing, including process capability profile and next steps; presenter asks for questions to be held until the end. Team takes notes on any feedback.
Conduct open discussion	Usually at the end of the briefing, the sponsor gives a "thank you" message, provides initial reaction, and then opens with his/her own questions or opens the discussion to the floor.
Thank sponsor and participants	Acknowledge the support personnel and all those who helped the appraisal succeed.

**Table 2-37. Steps for Present Final Briefing.**

### Output(s)

- Action items from briefing presentation
- Notes on participant reaction/feedback

### Typical duration/ effort

One to two hours duration for each appraisal team member and each appraisal participant.

### Notes

Before the actual briefing the sponsor should be coached on his/her participation in the meeting - i.e., the sponsor should be reminded that his/her reaction will have an impact on the reaction to follow-on actions.

## 2.2.11 Conduct Wrap-Up

---

**Purpose**

The purposes of Conduct Wrap-Up are to obtain feedback from the appraisal team on the appraisal process, to provide an opportunity for consulting with the appraisal team leader and organization appraisal representative on moving forward with the results to ensure that appraisal materials are properly accounted for, to return all documentation provided by the (appraised) organization to its proper location or custodian, and to list “what worked” and “what did not work.”

---

**Summary description**

Conduct Wrap-Up involves obtaining information about what worked and what did not work from the appraisal team members for feeding back to the process improvement organization. It also involves discussing and resolving findings and assignments from the recommendation(s) report. It requires returning all documentation and/or other materials borrowed for the appraisal to the appropriate accountable individuals, and making certain that the appraisal rooms/locations are restored to their pre-appraisal condition(s). Finally the lessons learned report is prepared.

---

**Entry Criteria**

- Appraisal completed and briefing presented
- 

**Exit criteria**

- Appraisal lessons learned are recorded.
  - Assignments are verified.
  - Actual schedule and resource utilization are recorded
  - Documentation and materiel returned.
  - Appraisal rooms/locations cleaned up.
-

## 2.2.11 Conduct Wrap-Up, Continued

---

### Roles

Table 2-38 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Appraisal team leader/ organization appraisal representative	Facilitates gathering data on what worked and did not work during the appraisal.
Appraisal team members	Provide input into what worked and what didn't work. Clean up appraisal locations.
Data manager	Return documentation and material.

**Table 2-38. Participants for Conduct Wrap-Up.**

---

### Input(s)

Action items from final briefing.

---

*continued on next page*

## 2.2.11 Conduct Wrap-Up, Continued

### Steps

Table 2-39 shows the steps for this process element.

Step	Description
Collect lessons learned	Appraisal team notes “lessons learned” - i.e., “what worked” and “what did not work”- and planned versus actual schedule and resource utilization
Review comments	Note comments from appraisal participants that arose during final briefing.
Answer last-minute questions	Often appraisal team members have questions about improvement plans, etc., that the ATL can spend some time answering and/or providing references for.
Return material and clean up.	Return borrowed documentation to appropriate custodians and return other materials. Clean up rooms and restore to original condition.

**Table 2-39. Steps for Conduct Wrap-Up.**

### Output(s)

- Schedule for completion of appraisal report.

### Typical duration/ effort

Duration: 2-4 hours  
Effort: 2-4 hours for each appraisal team member.

### Notes

There may be resistance to conducting a wrap-up session; therefore, this step must occur immediately after the final briefing.

## 2.3 Report Results

---

### Purpose

The purpose of the Report Results phase is to prepare the appraisal report, document lessons learned in the appraisal, and manage appraisal records.

---

### Summary description

The Record Results phase contains 2 activities as depicted below.

---

### Diagram

#### **Prepare and Deliver Appraisal Report**

- Review final briefing
- Plan the preparation of the report
- Write the report
- Review/revise the report
- Distribute/deliver the report

#### **Manage Records**

- Gather materials
- Decide disposition
- Transfer materials to be kept
- Destroy unwanted materials

## 2.3.1 Prepare and Deliver Appraisal Report

---

<b>Purpose</b>	The purpose of Prepare and Deliver Appraisal Report is to provide details or explanations beyond what was contained in the final briefing.
----------------	--

---

<b>Summary description</b>	The report provides the organization with documentation of the appraisal.
----------------------------	---

---

<b>Entry criteria</b>	<ul style="list-style-type: none"><li>• On site phase completed</li></ul>
-----------------------	---

---

<b>Exit criteria</b>	<ul style="list-style-type: none"><li>• Report delivered and accepted or approved by sponsor</li></ul>
----------------------	--

---

**Roles** Table 2-40 lists the primary roles involved in this activity and a summary of responsibilities.

Role	Summary
Organization appraisal representative or appraisal team leader	Coordinates preparation of report.
Appraisal team	Individual team members perform writing assignments and act as peer reviewers for the entire appraisal report.

**Table 2-40. Participants for Prepare and Deliver Appraisal Report.**

---

<b>Inputs</b>	<ul style="list-style-type: none"><li>• Final briefing</li><li>• Notes</li></ul>
---------------	--

---

## 2.3.1 Prepare and Deliver Appraisal Report, continued

---

### Steps

Table 2-41 shows the steps for this activity.

Step	Summary
Review final briefing	Review the final briefing
Plan the preparation of the report	Determine what needs to be provided in the final report, and who should do what, by when.
Write the report	Write the report
Review/revise the report	Peer review the report and revise as required.
Distribute/deliver the report	Distribute the report to its intended recipients.

**Table 2-41. Participants for Prepare and Deliver Appraisal Report.**

---

### Outputs

- Appraisal report

---

### Typical duration/ effort

Typical duration: 1-4 weeks  
Typical level of effort: 1-5 team days

---

### Notes

In the simplest case, the appraisal report may be a copy of the final briefing. Appraisal notes may be used in writing the report and during peer review to assist in developing recommendations and in verification of accuracy of the appraisal report.

The following data, at a minimum, shall be provided to the sponsor:

- Appraisal scope
  - Appraisal selections (site, projects, participants, team members)
  - Findings
  - Ratings
-

## 2.3.2 Manage Records

---

### Purpose

The purpose of Manage Records is to verify that all records of the appraisal, both intermediate and final, are disposed of or handed off in accordance with agreed-upon appraisal ground rules.

---

### Summary description

Manage Records involves reviewing all the gathered appraisal materials and ensuring their proper disposition. Most intermediate notes and work products are appropriately destroyed once the appraisal report is complete. Notes may be kept until then to provide context for recommendations and to verify the accuracy of the report.

---

### Entry criteria

- Appraisal report completed
- 

### Exit criteria

- Records being kept are secured
  - Records not needed are destroyed
- 

### Roles

Table 2-42 lists the primary roles involved in this activity and a summary of their responsibilities.

Role	Summary
Appraisal team	Gathers notes and other records and appropriately disposes of them.
Organization appraisal representative	Ensures all records are properly managed.
Process Improvement Organization	Maintains a library of FAA-iCMM appraisal reports

**Table 2-42. Participants for Manage Records.**

---

### Inputs

- All appraisal materials
  - Appraisal ground rules
-

## 2.3.2 Manage Records, continued

---

### Steps

Table 2-43 shows the steps for this activity.

Step	Summary
Gather materials	Gather all appraisal materials
Decide disposition	Decide disposition of materials according to groundrules
Transfer material to be kept	Transfer appraisal report and any other materials to be managed to the process improvement organization and to the SEI as appropriate
Destroy unwanted materials	Destroy materials that are not to be managed

**Table 2-43. Steps for Manage Records.**

---

### Outputs

- Process asset repository updated with material to be saved

---

### Typical duration/ effort

Typical duration: One to two hours  
Typical level of effort: 1-2 person hours

---

### Notes

For the records to be kept, the security provided should be equivalent to that for personnel actions. It is important that the integrity of the team be maintained; violation of the stated confidentiality rules, even after the fact, can damage future appraisal activities.

# Chapter 3: Alternative Appraisal Type Descriptions

---

## Introduction

This chapter contains descriptions for the alternative appraisal types which are part of the FAA-iCMM Appraisal Method (FAM).

These appraisal types are variations of the FAM Process Description (Full Internal Appraisal) depicted in Chapter 2, and are presented in comparison to that standard.

---

## In this chapter

The following descriptions are provided.

Section	Appraisal Type	See Page
3.1	Facilitated Discussion Appraisal	3-3
3.2	Document-intensive Appraisal	3-29
3.3	Questionnaire-based Appraisal	3-45
3.4	Interview-based Appraisal	3-75
3.5	Full External Evaluation	3-89

---

## Chapter 3: Alternative Appraisal Type Descriptions, continued

### Process descriptions

All descriptions are formatted the same, containing the blocks of information that are described in Table 3-1. Toolkits with appraisal aids and training materials are provided separately.

Block Title	Description
1. Introduction	This includes purpose, overview, and roles.
2. Summary description	<p>This is a summary of the work performed during the appraisal type. It includes an overview diagram of the method and a cross-reference table comparing the standard activities in the Full Internal Appraisal to the activities in the appraisal type. The differences from the standard activities are identified in the table as</p> <ul style="list-style-type: none"><li>• no change,</li><li>• minor change,</li><li>• major change,</li><li>• activity deleted, or</li><li>• new activity</li></ul> <p>with brief remarks summarizing activity variations as appropriate.</p>
3. Detailed description	<p>This section provides more details on the activities of the variation in relation to the standard, as appropriate.</p> <ul style="list-style-type: none"><li>• If there is no change, or the standard activity is deleted from this method, no further information is provided.</li><li>• If there is a minor change in the activity a separate section will discuss these changes</li><li>• If there is a major change to the method, the separate section will use the full template format of chapter 2 to discuss the changes.</li></ul>
4. Toolkit contents	A list of the appraisal aids that are provided with this appraisal type.

**Table 3-1. Process Description Format.**

# 3.1 Facilitated Discussion Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:

Topic	Page
3.1.1 Introduction	3-4
3.1.2 Summary Description	3-7
3.1.3 Detailed Description	3-8
3.1.4 Toolkit Contents	3-28

### 3.1.1 Introduction

---

#### **Purpose**

The Facilitated Discussion (FD) appraisal develops a description of an updated, improved process known as the “to-be” process. This appraisal method will not result in any type of rating of either maturity level or capability level.

The FD appraisal variation provides a starting point for a Process Action Team (PAT) just beginning a process improvement effort. It provides an option for training the PAT and program team members in the specific requirements of the selected Process Area (PA).

This appraisal method is truly a “self-appraisal” because it is carried out, for the most part, by those who perform the process being appraised. It acts on appraisal findings as part of the method and develops a description of an improved process that addresses weaknesses found in the appraisal.

The appraisal team, in this method, constitutes a Process Action Team (PAT) for a particular PA. Through a series of facilitated workshops, the appraisal team describes the currently used process for a particular FAA-iCMM Process Area (PA). This process is commonly known as the “as-is” process. The “as-is” process is appraised by comparing it to the FAA-iCMM Generic Practices (GPs), and the selected process area’s (PAs) Base Practices (BPs). Additional improvements are also sought. The resulting findings, or “gap analysis”, provide the basis for improvements to the “as-is” process and the generation of an updated, improved process known as the “to-be” process. The “to-be” process is presented as the final appraisal results, along with a plan to implement that improved process. The process is subsequently piloted in the program and eventually institutionalized.

This method can be used to develop an improved process covering more than 1 process area.

---

### 3.1.1 Introduction, continued

#### FD Roles

The following table shows the various roles of the people involved in the FD:

Role	Description
Appraisal Advocate	The description in chapter 1 is appropriate.
Sponsor	The description in chapter 1 is appropriate. The level of the sponsor for the FD is typically the program or project lead. It must be someone with the authority to commit the resources and prioritize the effort.
Facilitator	In the FD, the <i>Appraisal Team Lead (ATL)</i> is usually called a Facilitator. The facilitator must have a strong understanding of the FAA-iCMM, the FD appraisal method, and the particular PA selected, and must possess facilitation skills. The facilitator is a guide.
PAT Lead	The PAT lead plays the role of both the <i>OAR</i> and the <i>Site Coordinator</i> . The PAT lead does the up-front planning with the facilitator, arranges and schedules the PAT activities, documents the process, and (in conjunction with the facilitator) leads the documentation sessions. It is important that this person be knowledgeable in the selected PA, respected in the program, and have the time and willingness to support the effort. FD appraisal method knowledge is desirable.
Process Action Team (PAT)	The PAT acts as both the <i>FAM appraisal team</i> and the <i>appraisal participants</i> . They are the group responsible for deriving and describing an improved process for the selected PA, and developing its implementation plan. It is important that the people selected for this team be knowledgeable in the selected PA, and respected on the program. If at all possible, it is suggested that appropriate subject matter experts (SMEs) be included on the PAT. It is best to have between 3-5 people on this team. Anyone else involved in the selected PA will be involved through the review team.

### 3.1.1 Introduction, continued

---

Role	Description
Review Team	The review team is made up of program members who carry out the selected PA. The review team validates the processes developed by the PAT. If the SMEs are not part of the PAT then it is imperative that they be appraisal participants by being on the review team.
Data Manager	The description in chapter 1 is appropriate.

### 3.1.2 Summary Description

ID	FAM Activity Name	FD Description	Remarks
<b>2.1</b>	<b>Plan and Prepare for the Appraisal</b>		
2.1.1	Obtain Sponsor Commitment	No change.	Sponsor is typically at a program or project level, rather than an organizational level.
2.1.2	Select Appraisal Scope	Minor change.	Select PA and PAT Lead.
2.1.3	Select Appraisal Team	Minor change.	Select PAT members.
2.1.4	Plan Appraisal Details	Minor change.	Develop and approve detailed PAT project plan.
2.1.5	Orient Participants	No change.	
2.1.6	Train Team	Major change.	Explain roles and responsibilities to the PAT and ensure PA knowledge.
2.1.7	Administer Questionnaire	Activity deleted.	
2.1.8	Develop Exploratory Questions	Activity deleted.	
<b>2.2</b>	<b>Conduct Appraisal</b>		
2.2.1	Conduct Opening Meeting	Activity deleted	
2.2.2	Conduct Interviews	Major change.	The interview sessions are facilitated discussions used to elicit the as-is process. Review Documentation (2.2.3) and Consolidate Data (2.2.4) are conducted concurrently to evolve the as-is process.
2.2.3	Review Documentation	Minor change	Relevant documents may describe parts of the as-is process.
2.2.4	Consolidate Data	Minor change	This brings together the as-is process description.
2.2.5	Develop Draft Findings	Major change.	Findings are the gap analysis. Improvement opportunities are identified.
2.2.6	Present Draft Findings	Activity deleted.	
2.2.7	Develop Ratings	Activity deleted.	
2.2.8	Develop Final Briefing	Major change.	Final Brief is the to-be Process. This activity is renamed "Derive To-Be Process"
2.2.9	Brief Sponsor	Minor change.	Get approval for to-be Process and Implementation plan.
2.2.10	Present Final Briefing	Activity deleted.	
2.2.11	Conduct Wrap-Up	No change.	
<b>2.3</b>	<b>Report Results</b>		
2.3.1	Prepare and Deliver	Activity deleted.	

	Appraisal Report		
2.3.2	Manage Records	Activity deleted.	

### 3.1.3 Detailed Description

---

#### FD 2.1.2 Select Appraisal Scope

##### Summary Description

Select Appraisal Scope involves determining the PA the PAT will work on and developing a preliminary PAT project plan detailing how the PAT will tailor this FD process.

---

##### Exit Criteria

- Overall PI implementation strategy developed
  - Preliminary PAT project plan developed
  - PAT Lead identified and selected
  - Facilitator selected.
- 

##### Roles

Table FD-1 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Sponsor	Determine focus of the appraisal (number of PAs, priority of each PA, priority of process improvement as compared to other tasking), select Facilitator and PAT Lead.
Appraisal Advocate	Guide the Sponsor in defining the appraisal scope, determining an overall strategy for implementing process improvement, and the selection of a PAT Lead and Facilitator.
PAT Lead	In addition to having those responsibilities for the OAR/site coordinator, the PAT Lead is responsible for developing a preliminary PAT project plan.
Facilitator	Supports PAT lead

Table FD-1. Participants for Select Appraisal Scope

### 3.1.3 Detailed Description, continued

---

#### FD 2.1.2 Select Appraisal Scope, continued

**Inputs** PAT Project Plan template (see toolkit).

---

**Steps** Table FD-2 shows the steps for this activity.

Step	Description
Identify appraisal scope	<ul style="list-style-type: none"><li>• Select the PA(s) targeted for Process Improvement.</li><li>• Determine the priority of the PI effort (as compared to other tasking).</li><li>• Identify the order the PAs should be worked.</li></ul>
Identify organization scope	From the process scope, work with the advocate or sponsor to identify the affected parts of the enterprise to be included in the appraisal, and designate those not to be included.
Make preliminary arrangements	<ul style="list-style-type: none"><li>• Identify and select the PAT Lead.</li><li>• Agree on and select Facilitator</li></ul>
Document preliminary plan	Develop a preliminary PAT project plan indicating roles, responsibilities, schedule, risks, and other items as seem appropriate from the PAT project plan template.

Table FD-2. Steps for Select Appraisal Scope

---

**Outputs**

- Preliminary PAT project plan replaces the Preliminary Appraisal Plan

---

**Notes** Selecting the scope can occur once and detail an implementation timeline for several PAs or it can be done individually for each PA and each PAT. If scope of appraisal extends beyond sponsor's authority, multiple sponsors may be required.

---

### 3.1.3 Detailed Description, continued

---

#### FD 2.1.3

#### Select Appraisal Team

##### Entry Criteria

- Preliminary PAT project plan developed
  - PAT Lead identified and selected
- 

##### Exit Criteria

- PAT members selected
- 

##### Inputs

Preliminary PAT Project Plan

---

##### Roles

Table FD-3 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Sponsor	Reviews and approves the selection and participation of PAT members.
Appraisal Advocate	Works with the PAT Lead and Facilitator to determine the best members for the PAT.
PAT Lead	Develops a list of potential PAT members. Makes contact with the potential members to discuss availability. Works with sponsor and members supervisors to finalize membership.
Facilitator	Works with the PAT Lead to ensure the right types of people are included on the PAT.

Table FD-3. Participants for Select Appraisal Team

---

##### Steps

Table FD-4 shows the steps for this activity.

Steps	Description
Identify PAT and Review Team Candidates	Recommend potential team members.
Select PAT and Review Team members	Determine availability of candidates. Get commitment from the individuals, their managers, and the sponsor for selection to this team.

Table FD-4. Steps for Select Appraisal Team

### 3.1.3 Detailed Description, continued

---

**FD 2.1.3****Select Appraisal Team, continued****Outputs**

- Updated and approved PAT Project Plan with PAT and Review team members identified.
- 

**Notes**

The PAT size is typically 3-5 members, with a minimum of 3 and a maximum of 8. There may be more people in the program involved in the PA, but they should be part of the review team. Too many people as part of the PAT will make the process too slow. The facilitator is not counted in the numbers above. The PAT should have as many SMEs as possible. If there are no SMEs on the PAT they *must* be part of the review team. Trying to implement a new or improved process without the prior approval of the SMEs will almost surely result in a failed effort. Similarly, staffing a PAT with the most inexperienced people in the program will probably result in a process that can not be implemented or supported.

---

### 3.1.3 Detailed Description, continued

---

#### FD 2.1.4 Plan Appraisal Details

**Purpose**

- The purpose of Plan Appraisal Details is to produce and approve a detailed PAT Project Plan.

---

**Exit Criteria**

- PAT Project Plan finalized and approved

---

**Roles**

Table FD-5 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
PAT Lead	Develops PAT Project Plan and all associated details in conjunction with PAT and Facilitator.
PAT	Support PAT Lead in development of PAT Project Plan.
Facilitator	Support PAT Lead in development of PAT Project Plan.
Sponsor	Approve PAT Project Plan.

Table FD-5 Participants for Plan Appraisal Details

---

**Steps**

Table FD-6 (all steps except those noted below are unchanged).

Step	Description
Develop Questionnaire	Delete this step.
Request Documentation	Identify and gather any process documentation related to the selected PA.

Table FD-6. Steps for Plan Appraisal Details

---

### 3.1.3 Detailed Description, continued

---

#### FD 2.1.4

#### Plan Appraisal Details, continued

##### Outputs

- Approved PAT Project Plan, which includes
  - Goals of the appraisal
  - Process Area(s) selected and if more than one PA selected, the order in which they will be accomplished.
  - Roles, Responsibilities, Assignments –a description of what each role should do and the name(s) of the individual(s) filling that particular role.
  - Assumptions
  - Priority – a statement indicating the sponsor’s determination of how this effort should be prioritized as related to other tasking.
  - Expected outputs – examples would be graphical process description, high-level process description, detailed process description, detailed procedure description.
  - Resource and schedule
  - Tasks/activities to be performed (these are the steps of the FD method with any tailoring)
  - Reporting Requirements – some examples are: periodic status report to sponsor, and to directorate SEPG; items expected to report on (i.e., schedule status, accomplishment, risks reviewed, resource and schedule tracking)
  - Detailed schedule – this should list major milestones and may be provided as an attachment.
  - Risks and Risk Mitigation Strategy
- Library of current process documentation for the selected PA

---

##### Notes

Delete any information related to the gathering, developing, analyzing, or conducting a questionnaire.

---

### 3.1.3 Detailed Description, continued

---

**FD 2.1.6****Train Team****Purpose**

The purpose of train team is to explain to the PAT their role and responsibilities in conducting a FD.

---

**Summary  
Description**

The training centers on reviewing the appropriate parts of the PAT Project Plan (i.e., Goals, Roles, Responsibilities, Activities, and Assignments).

---

**Entry Criteria**

- PAT Project Plan approved
  - PAT Lead, PAT identified
- 

**Exit Criteria**

- PAT appears to be willing and able to carry out the FD appraisal.
- 

**Roles**

Table FD-7 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
PAT Lead	Leads the PAT through the PAT Project Plan and associated roles and responsibilities.
Facilitator	Assists PAT lead as needed. Provides training as needed.
PAT	Attend training.

Table FD-7. Participants for Train Team

---

**Inputs**

- Approved PAT Project Plan

## 3.1.2 Detailed Description, continued

### FD 2.1.6

### Train Team, continued

#### Steps

Table FD-8 shows the steps for this activity.

Step	Description
Determine training needs.	Determine if the PAT needs a review or refresher of the selected process area.
Provide PA training.	Discuss the overall goals and base practices of the selected PA with the PAT. Also discuss the Generic Practices. (as appropriate)
Provide FD training.	Explain and discuss the overall FD method (i.e., as-is, gap analysis, to-be, implementation plan).
Review PAT Project Plan	Discuss the PAT Project Plan paying particular attention to roles, responsibilities, schedule, outputs, and risks.

Table FD-8. Steps for Train Team

#### Outputs

- Briefing slides

#### Typical duration/ effort

- Typical calendar duration: 8 hours
- Typical level of effort: 2-8 hours per PAT member

#### Notes

This activity reduces PAT concerns by providing descriptions of the what, how, and why of the process improvement effort, together with a question and answer session.

Different parts of this training can be combined with other parts of the process. For example, the PAT participates in developing the PAT Project Plan (2.1.4). So, all or some of the training might be provided when the team is developing the project plan.

### 3.1.3 Detailed Description, continued

---

#### FD 2.2.2

#### Conduct Interviews

##### Purpose

The purpose for Conduct Interviews is to elicit, through facilitated discussion, the as-is process.

---

##### Summary Description

The team describes the specified PAs process. Eliciting the as-is process may take several sessions and this step may recur in conjunction with Review Documentation and Consolidate Data.

---

##### Entry Criteria

- PAT Lead and PAT members have been selected and trained.
- 

##### Exit Criteria

- As-is process sufficiently described.
- 

##### Roles

Table FD-9 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
PAT Lead	<ul style="list-style-type: none"><li>• Leads PAT, with assistance from the facilitator, in the documentation of the selected PA.</li><li>• Documents the process.</li><li>• Provides minutes of the session (as needed)</li><li>• Assigns and follows up on action items</li></ul>
Facilitator	<ul style="list-style-type: none"><li>• Helps to lead the documentation of the process (as required).</li></ul>
PAT	<ul style="list-style-type: none"><li>• Participate in all sessions and develop the as-is process.</li></ul>

Table FD-9. Participants for Conduct Interviews

---

##### Inputs

- Any prior versions of a documented process for the selected PA
-

### 3.1.3 Detailed Description, continued

#### FD 2.2.2

#### Conduct Interviews, continued

##### Steps

Table FD-10 shows the typical steps in this activity.

Step	Description
Describe or review current high level process	Identify the high-level process steps being used for accomplishing the selected PA. In general, there should be about 4-8 process steps associated with this level of description. This may be done initially, following a top-down approach, or the high level process may be derived from lower level steps elicited first.
Describe or review intermediate level process	Take the individual high-level process steps and break each down to the next level of detail, as needed. Sometimes, a high level description is sufficient for describing and understanding the process. The PAT may start by describing intermediate level process steps if it seems more natural.
Describe or review procedures, if appropriate	Take the intermediate level process steps and break them down into the specific steps used to accomplish them. The description should identify the person responsible (by function), the action(s) required, any inputs needed, the output expected. This should be carried out only in enough detail so that the team is satisfied that this is the current process being followed, and that findings can be derived from the description. These procedures may already be described in team documents (see Review Documentation). The team may start at this lowest level and then group steps together to form higher-level process descriptions.

Table FD-10. Steps for Conduct Interviews

### 3.1.3 Detailed Description, continued

**FD 2.2.2**

---

**Conduct Interviews, continued**

**Outputs**

- Data on the as-is process.
- 

**Typical duration/  
effort**

- Typical calendar duration: 1-30 days
- Typical level of effort: 4-40 hours per person

### 3.1.3 Detailed Description, continued

---

#### FD 2.2.3

#### Review Documentation

##### Purpose

The purpose of Review Documentation is to augment the development of the as-is process description through team artifacts.

---

##### Summary description

The team reviews documentation of the currently used process and incorporates it into the evolving description of the as-is process.

---

#### FD 2.2.4

#### Consolidate Data

##### Purpose

The purpose of Consolidate Data is to bring together the description of the as-is process as obtained during facilitated discussions and document review. This step should be performed multiple times, typically at the conclusion of data gathering sessions.

---

##### Summary description

The team consolidates the data obtained and derives the as-is process description. This is mainly a documentation step.

---

##### Entry Criteria

At least one data gathering session has been held

---

##### Exit criteria

The as-is process for the selected PA is described.

---

##### Roles

Table FD-11 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
PAT Lead	Develops the as-is process description
Facilitator	Assists in developing the process description
PAT	Assists in developing the process description

**Table FD-11. Participants for Consolidate Data**

---

##### Inputs

Documents and interview notes

### 3.1.3 Detailed Description, continued

---

#### FD 2.2.4 Consolidate Data, continued

**Steps** Table FD-12 shows the steps for this activity.

Step	Description
Document results	Bring together and document results obtained during group discussions and document review.

**Table FD-12. Steps for Consolidate Data**

---

**Output(s)**

- as-is process description.

---

**Typical Duration/Effort** Typical calendar duration: 3-10 days  
Typical level of effort: 8-20 hours, total effort

---

**Notes** Data may be consolidated several times as the as-is process description evolves.  
Typically, one or two people carry out this activity.

---

### 3.1.3 Detailed Description, continued

---

#### FD 2.2.5

#### Develop Draft Findings

##### Purpose

The purpose of Develop Draft Findings is to compare the as-is process description to the FAA-iCMM process area and generic practices, to look for other ways that the process might be improved, and to incorporate this into a Gap Analysis report.

---

##### Summary description

The team performs a detailed analysis (Gap Analysis) of the just described as-is process, comparing it to the FAA-iCMM BP and GP descriptions and identifying possible shortfalls or omissions. General improvement opportunities are sought and also included in Draft Findings.

---

##### Entry Criteria

- The as-is process for the selected PA is documented.

---

##### Exit criteria

- The as-is process has been reviewed and draft findings (a Gap Analysis report) have been generated..

---

##### Roles

Table FD-13 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
PAT	Compare as-is process to the FAA-iCMM and develop Gap Analysis report.
Facilitator	Assist team in Gap Analysis and identification of improvement opportunities
PAT Lead	Lead the PAT in developing the gap analysis report

**Table FD-13. Participants for Develop Draft Findings**

---

##### Inputs

- Completed as-is process for selected PA
-

### 3.1.3 Detailed Description, continued

#### FD 2.2.5

#### Develop Draft Findings, continued

#### Steps

Table FD-14 shows the steps for this activity.

Step	Description
Develop traceability matrix	Map as-is process to the practices in the appropriate traceability matrix
Review as-is process for compliance with FAA-iCMM	Review completed traceability matrix identifying gaps.
Identify areas for potential improvement	Examine the as-is process and identify areas for potential improvement considering quality, efficiency, effectiveness, experience with the as-is process, etc.
Document results	Document draft findings in a Gap Analysis report

**Table FD-14. Steps for Develop Draft Findings**

#### Output(s)

- Draft Findings (Gap Analysis Report)

#### Typical Duration/Effort

Typical calendar duration: 3-10 days  
Typical level of effort: 6-16 hours per person

#### Notes

Develop Draft Findings includes for example reviewing the current process vs. current relevant policies, standards, etc. during review of the generic practices.  
Identifying areas for potential improvement may include identifying and understanding differences between documented processes and the captured as-is process.

### 3.1.3 Detailed Description, continued

---

#### FD 2.2.8 **Derive To-Be Process** *(renamed from Develop Final Briefing)*

**Purpose** The purpose of Derive To-Be Process to form a new improved process called the “to-be” process, and to develop a plan to implement it.

---

**Summary description** The PAT will take the gap analysis results and develop an updated process, along with associated procedures. This may be as simple as adding one or two steps to a procedure or as complicated as having to restructure flows and functions. The PAT and the Review team review the new process and ensure it is compliant. The PAT then develops the implementation plan.

---

**Entry Criteria**

- The gap analysis has been conducted.

---

**Exit criteria**

- The to-be process and implementation plan are documented, reviewed, and agreed upon.

---

**Roles** Table FD-15 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
PAT Lead	Leads the PAT through the development of an updated process and implementation plan.
PAT	Develop the to-be process and the implementation plan.
Review Team	Review to-be process and the implementation plan.
Facilitator	Facilitate the team, as needed.
Sponsor	Review issues and provide direction/guidance

**Table FD-15. Participants for Derive To-Be Process**

---

**Inputs**

- Documented as-is process for selected PA.
- Gap Analysis Report.

---

### 3.1.3 Detailed Description, continued

FD 2.2.8

**Derive To-Be Process, continued** (*renamed from Develop Final Briefing*)

**Steps**

Table FD-16 shows the steps for this activity.

Step	Description
Analyze issues	Using the gap analysis report, prioritize the issues and identify relationships among issues.
Review issues	Review issues with review team and revise as required.
Brief sponsor	Present issues and status of the appraisal. Receive direction and/or guidance regarding acceptability and feasibility for implementation. This is an optional step.
Describe improvements	Based on the gap analysis report, issues, and sponsor guidance, review the as-is process. Propose specific improvements to the as-is process. This may involve making only minor changes, or it require a complete restructuring of the process. The to-be process should be described at an appropriate level of detail to ensure it is repeatable by those who will perform it.
Document results	Document the new “to-be” process.
Regap	Perform another gap analysis of the new “to-be” process. Update the traceability matrix. Review compliance with PA and capability level goals.
Review/ revise to-be process	Review the “to-be” process with the review team. PAT incorporates changes as required.
Develop implementation plan	Develop a plan to implement the to-be process.
Review/ revise	Review implementation plan with review team. PAT incorporates changes as required.

**Table FD-16. Steps for Derive To-Be Process**

### 3.1.3 Detailed Description, continued

FD 2.2.8

---

**Derive To-Be Process, continued** (*renamed from Develop Final Briefing*)

---

**Output(s)**

- to-be process
  - Implementation Plan
- 

**Typical  
Duration/Effort**

Typical calendar duration: 14-90 days (based on extensiveness of gap analysis)  
Typical level of effort: PAT: 16-80 hours/team member  
Review team: 8-40 hours/team member  
Sponsor: 1-2 hours

---

**Notes**

- The implementation plan can be an extension to the PAT Project Plan or a separate document. The same general topics identified in the PAT Project Plan should be addressed relative to the implementation of the to-be process. In addition, process and domain training should be addressed.
  - Derive To-Be Process activities may require iteration through further gap analysis as the to-be process evolves.
  - Disposition and coordinate all review comments regarding the to-be process and the implementation plan.
-

### 3.1.3 Detailed Description, continued

#### FD 2.2.9

#### Brief Sponsor

##### Purpose

The purpose of brief sponsor is to obtain sponsor approval of the to-be process and the implementation plan.

---

##### Summary description

The to-be process is presented to the sponsor for approval to implement along with a plan on how to implement it.

---

##### Entry Criteria

- To-be process and implementation plan have been reviewed and agreed upon.
- 

##### Exit criteria

- Sponsor approves the to-be process and implementation plan.
- 

##### Roles

Table FD-17 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
PAT Lead	Develops Briefing. Presents to-be process and implementation plan to the Sponsor.
PAT	Supports the PAT Lead as needed.
Review Team	Supports the PAT Lead as needed.
Facilitator	Supports the PAT Lead as needed.
Sponsor	Provide direction/guidance to PAT Lead on to-be process and implementation plan.

**Table FD-17. Participants for Review Documentation**

---

##### Inputs

- to-be process and Implementation Plan.

### 3.1.3 Detailed Description, continued

**FD 2.2.9**

---

#### **Brief Sponsor, continued**

**Steps**

Table FD-18 shows the steps for this process element.

<b>Step</b>	<b>Description</b>
Develop Briefing	Develop the sponsor briefing
Brief Sponsor	Summarize results and appraisal activities and present implementation plan.
Obtain approval	Obtain approval of the sponsor to implement the to-be process.
Discuss next steps	Discuss the remaining schedule and risks identified in the implementation plan.

**Table FD-18. Steps for Review Documentation**

---

**Output(s)**

- Approved to-be process and Implementation Plan.
- 

**Typical  
Duration/Effort**

Typical calendar duration: 1 day  
Typical level of effort: 1 hour for sponsor and each PAT member attending briefing

---

**Notes**

Typically the PAT lead will brief the sponsor, but other team members may attend. If sponsor does not approve the as-is process of the implementation plan, the team could revisit prior steps based on guidance from the sponsor.

### 3.1.4 Toolkit Contents

---

The FD Appraisal Toolkit contents are listed below.

Toolkit item
FD Project Plan Template
Process Template
Procedure Template
Implementation Plan Template
Traceability Matrices
Process Area Tracking Sheet

## 3.2 Document Intensive Appraisal Method Description

---

### Contents

The following table provides a guide to the information found in this section:

Topic	Page
3.2.1 Introduction	3-30
3.2.2 Summary Description	3-32
3.2.3 Detailed Description	3-33
3.2.4 Toolkit Contents	3-44

---

### 3.2.1 Introduction

---

**Purpose**

The Document Intensive appraisal method (DI Appraisal) focuses on an organization's documented processes and associated artifacts.

The DI appraisal is a quick look at an organization's process that provides a detailed view into a single program and one or two process areas, or alternatively, a few programs on a single process area. The DI appraisal takes a detailed look at the procedures defining any particular process, along with the associated resulting artifacts and compares them to the FAA-iCMM framework. It also provides an option to have the project manager guide the DI appraisal team through the documents and provide additional insight into the process.

The DI appraisal method is structured closer to audit principles than the FAM. As a result, while strengths may be noted, the main output from this type of appraisal is the identification of weaknesses and areas needing attention.

The DI appraisal is a good check to perform several months prior to a full internal appraisal. This appraisal method will not result in any type of rating at either the maturity level or the capability level. It focuses on weaknesses. That, coupled with the organization's prioritization and action planning, should result in successful preparation for the full FAM.

### 3.2.1 Introduction, continued

---

The following table shows the various roles of people involved in the DI appraisal:

<b>Role</b>	<b>Description</b>
Sponsor	The description in chapter 1 is appropriate. However, the level of the sponsor for the DI can be much lower, even the Program Manager.
Appraisal Team Lead (ATL)	The description in chapter 1 is appropriate.
Organization Appraisal Representative (OAR)	The description in chapter 1 is appropriate.
Appraisal Team	The description in chapter 1 is appropriate.
Site Coordinator	The description in chapter 1 is appropriate.
Data Manager	The description in chapter 1 is appropriate.
Appraisal Participant(s)	Act as guides through the documentation matrix and program artifacts. They may also verify and provide additional information to support the appraisal team. Appraisal participants should typically be leads.

### 3.2.2 Summary Description

ID	FAM Activity Name	DI Description	Remarks
<b>2.1</b>	<b>Plan and Prepare for the Appraisal</b>		
2.1.1	Obtain Sponsor Commitment	Minor change	Provides pros and cons of two types of DI Appraisal.
2.1.2	Select Appraisal Scope	No change.	
2.1.3	Select Appraisal Team	Minor change.	Size and membership of team are based on scope.
2.1.4	Plan Appraisal Details	Minor change.	Documentation matrix replaces questionnaire.
2.1.5	Orient Participants	Minor change.	Optional activity incorporated in 2.1.4. However, if not done there it needs to be done now.
2.1.6	Train Team	No change.	Length of training is approximately 1-2 hrs.(model training excluded)
2.1.7	Administer Questionnaire	Major change	Ensure the documentation matrix is sufficiently completed to conduct the DI appraisal successfully. Renamed Administer Documentation Matrix.
2.1.8	Develop Exploratory Questions	Activity deleted.	
<b>2.2</b>	<b>Conduct Appraisal</b>		
2.2.1	Conduct Opening Meeting	No change.	
2.2.2	Conduct Interviews	Activity deleted.	
2.2.3	Review Documentation	Major change.	Review the documentation using the documentation matrix as a guide.
2.2.4	Consolidate Data	Minor change.	Delete interviews, the corroboration activity, and the sufficiency review.
2.2.5	Develop Draft Findings	No change.	
2.2.6	Present Draft Findings	Minor change	Optional activity. Not needed in non-participative method. In participative method strengths and weaknesses are reviewed with appraisal participants when developed.
2.2.7	Develop Ratings	Activity deleted.	
2.2.8	Develop Final Briefing	Minor change	Optional activity. Draft findings may become final if no issues identified.
2.2.9	Brief Sponsor	No change.	
2.2.10	Present Final Briefing	Minor change.	Optional activity. Dependent on level of sponsor and sponsor's role in appraisal.
2.2.11	Conduct Wrap-Up	No change.	

<b>2.3</b>	<b>Report Results</b>		
2.3.1	Prepare and Deliver Appraisal Report	No change.	
2.3.2	Manage Records	No change.	

### 3.2.3 Detailed Description

---

#### DI 2.1.1 Obtain Sponsor Commitment

##### Notes

Once it is decided to perform a DI Appraisal, determine what type of DI Appraisal is desired. There are two types: the participative and the non-participative model.

In the non-participative approach the ATL, or team of appraisers (always at least two people), from outside the project come in to review the documentation based on the documentation matrix. The documentation matrix is a spreadsheet detailing each Base Practice and Generic Practice for each Process Area. The Project Managers are responsible for filling out this matrix prior to the start of the DI. For more information on the documentation matrix see the toolkit at the end of this section. There is minimal interaction between the appraisal team and any project personnel.

Advantages of this approach:

1. Completely independent review of process and artifacts.
2. Does not take any time away from normal daily functions.

Disadvantages of this approach: Results are based solely on information provided in the documentation matrix and appraisal library. So, unless the projects ensured that the correct documentation and mapping is provided, the results may not accurately reflect the project's position.

The participative approach is the same as the non-participative except the organization provides appraisal participants to sit with the appraisal team and assist them through the documentation matrix. In addition to being guides through the documentation matrix, the discussions between the appraisal participants and appraisal team provides additional verification of both strengths and weaknesses.

This has several advantages.

1. There is a better chance of finding additional information should the initial references in the documentation matrix be incorrect or insufficient.
2. Any discrepancies found have a much better chance of buy-in by the appraisal participants since they were part of the process.

Disadvantages of this approach:

1. Will require several hours of appraisal participants' time to support (per project/per process area).
2. Will take longer to perform due to the interactions between the appraisal team and participants.

### 3.2.3 Detailed Description, continued

---

#### DI 2.1.3

#### Select Appraisal Team

##### Notes

The DI Appraisal requires the following roles: the ATL, OAR, Site Coordinator, Data Manager, and Appraisal Team Members

The size of the appraisal team varies based on the number of PAs and Projects selected, the number of days allocated for the appraisal, and the number of appraisal team members. The minimum team size is two. It is equally feasible to have a team of six. The rule of thumb is that it takes a team about four hours per Process Area per Project being appraised. An appraisal covering two process areas and four projects would produce the following estimates:

1. One team approximately four days
2. Two teams approximately two days
3. Three teams approximately a day and a half
4. Four teams approximately a day and a half

If the appraisal scope were three process areas over the same four projects ,the estimates are:

1. One team approximately six days
2. Two teams approximately three days
3. Three teams approximately two days
4. Four teams approximately two days

Qualifications for appraisers center on familiarity with the FAA-iCMM and the specific process area(s) under review.

---

#### DI 2.1.4

#### Plan Appraisal Details

##### Table 2-9, Step Develop Questionnaire

Method variation replaces the questionnaire with the Documentation Matrix. The Documentation Matrix must be provided to the OAR/Site Coordinator 3-4 weeks prior to the start of the DI Appraisal.

---

##### Outputs

Delete the requirement for a questionnaire and replace it with documentation matrices for each PA included in the appraisal.

---

### 3.2.3 Detailed Description, continued

---

#### DI 2.1.4

#### Plan Appraisal Details, continued

##### Notes

Delete the paragraph concerning the questionnaire.

As part of providing the documentation matrix to the OAR/Site Coordinator, provide an overview of how to fill in the matrix, who should do it, and the level of information needed. The whole discussion typically takes about 30 minutes. The OAR is then responsible for explaining to the individuals selected to fill out the matrix what needs to be done. This eliminates the need to do specific training for each appraisal participant. The documentation matrix will be completed and the ATL will review the documentation matrix in activity DI 2.1.7, Administer Documentation Matrix, to ensure the correct level of information is being provided.

---

#### DI 2.1.5

#### Orient Participants

##### Summary Description

Delete the reference to questionnaires.

---

##### Roles, Inputs

Replace Documentation Matrix for questionnaire in each area.

---

##### Notes

Delete the references to both the questionnaire and the interviews.

As mentioned in activity DI 2.1.4, during plan appraisal details, the OAR is provided the documentation matrices and training. The OAR now distributes the documentation matrices, explains to the participants the appraisal process and how to fill out the matrices, and provides any needed guidance and follow-up with the appraisal participants.

The project people selected to participate in the appraisal are usually the same people who fill out the documentation matrices. If this is not the case, then separate guidance sessions need to be held for the participants and the people filling in the documentation matrix. The OAR should coordinate this.

### 3.2.3 Detailed Description, continued

---

**DI 2.1.5                      Orient Participants, continued**

**Notes, continued**        The orientation for the people filling in the documentation matrix should be done 3-4 weeks prior to the scheduled start of the appraisal. Otherwise, there will be insufficient time to complete the matrices. If different people will be the appraisal participants they can receive the information they need to participate in the appraisal during the opening briefing.

---

**DI 2.1.7                      Administer Documentation Matrix (*renamed from Administer Questionnaire*)**

---

**Purpose**                      The purpose of Administer Documentation Matrix is to ensure the matrix is completed, and that it provides enough detail to allow efficient conduct of the DI Appraisal.

---

**Summary description**        The OAR distributes the documentation matrix to the participants for completion. The Appraisal Team Leader reviews the documentation matrix to ensure all items in the matrix have references to project documentation. The next level of review is to ensure the references are detailed enough to provide a ready reference point (i.e., document name, page number, paragraph number). If more than one or two references are missing or the traceability into the documentation is sketchy or high level (i.e., Project Plan), the ATL needs to meet with the OAR and require additional or more detailed information. Additionally, the ATL needs to review the objective of the appraisal and determine if the deficiency of data would prevent accomplishment of the goal of the appraisal. For example, if the goal of the appraisal is to validate preparedness for a full internal appraisal and the matrix indicates missing documentation, then evaluate the need for conducting this appraisal.

---

**Entry Criteria**                • Orientation completed

---

**Exit criteria**                • Documentation matrices have been reviewed by ATL and found to contain sufficient references and details to allow for the conduct of the DI Appraisal.

---

### 3.2.3 Detailed Description, continued

---

#### DI 2.1.7

**Administer Documentation Matrix, continued** (*renamed from Administer Questionnaire*)

---

#### Roles

Table DI-1 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Appraisal Team Leader	Accomplishes review of documentation matrix. Coordinates with OAR for additional information. Assess readiness of documentation matrices for beginning of DI Appraisal.
OAR	Gathers all documentation matrices from selected projects. Provides matrices to Appraisal Team Leader. Coordinates any requests for additional information with the Appraisal Participants. Reviews success probability with Appraisal Team Leader. Participates with Appraisal Team Leader in discussion with Sponsor when success probability is low.
Appraisal Participants	Fill out of the documentation matrix.

**Table DI-1. Participants for Administer Documentation Matrix**

---

#### Inputs

- Blank Documentation Matrices
-

### 3.2.3 Detailed Description, continued

DI 2.1.7

---

**Administer Documentation Matrix, continued** (*renamed from Administer Questionnaire*)

---

**Steps**

Table DI-2 shows the steps for this process element.

Step	Description
Complete Documentation Matrix	<ul style="list-style-type: none"><li>• The Appraisal Participants research and provide a detailed reference (document, page number, paragraph number) for each entry in the documentation matrix.</li></ul>
Collect Documentation Matrices	<ol style="list-style-type: none"><li>1. Collect completed documentation matrices from each Appraisal Participant.</li><li>2. Review each matrix for omissions of data and level of information.</li><li>3. If information is not specific enough work with Appraisal Participants to provide correct level.</li><li>4. Package all matrices and send to ATL for review.</li></ol>

Table DI-2. Steps for Administer Documentation Matrix (1 of 2)

---

### 3.2.3 Detailed Description, continued

#### DI 2.1.7

#### Administer Documentation Matrix, continued (*renamed from Administer Questionnaire*)

Review Documentation Matrices	<p>ATL reviews all matrices for omissions and level of detail provided. (i.e., If there are more than one or two empty references or the traceability into the documentation is sketchy or high level (i.e., Project Plan), the ATL needs to meet with the OAR and require additional or more detailed information).</p> <p>Review matrix results with goals of appraisal (i.e., if the goal of the appraisal is to validate preparedness for a full internal appraisal and the matrix indicates missing documentation, then reevaluate the appropriateness for conducting this appraisal).</p> <p>Communicate results of review to OAR.</p>
Analyze Documentation Matrices	Determine if additional information or further actions are required and act on actions required.

Table DI-2. Steps for Administer Documentation Matrix (2 of 2)

#### Output(s)

- Completed Documentation Matrices
- Updated Appraisal Plan (if needed)

#### Typical Duration/Effort

Preparation Time: approximately 8 hours to 5 days to fill out the documentation matrix per process area per project

Review Time: Typically, up to an hour.

#### Notes

It is critical that the documentation matrices be completed to the appropriate level prior to beginning the appraisal. If the matrices are not sufficiently completed, the amount of time to conduct the appraisal significantly increases. Preparation time is dependent on the Appraisal Participants' familiarity with the project's documentation and understanding of FAA-iCMM. The result of documentation matrix review could mean the difference between a smoothly run appraisal and a time consuming, stress filled appraisal.

### 3.2.3 Detailed Description, continued

---

#### DI 2.2.3

#### Review Documentation

##### Purpose

The purpose of Review Documentation is to review process/procedure descriptions, along with process artifacts, for compliance with the relevant FAA-iCMM process areas.

---

##### Summary description

The appraisal team will use the documentation matrix as a guide to review project or organization procedures and artifacts. In the non-participative method either there is compliance or not. The appraisal team may request additional information but time constraints limit the amount of information that can be followed up on. In the participative method, the appraisal participant acts as guide for the appraisal team walking them through the matrix and documentation along with providing additional references/information if needed/available.

---

##### Entry Criteria

- Completed Appraisal Plan and decision to continue.
- 

##### Exit criteria

- All relevant project/organization documentation has been reviewed.
- 

##### Roles

Table DI-3 lists the primary roles involved in this process element and a summary of their activity during this process.

Role	Summary
Appraisal Team	As teams or individually, review the project/organization documentation and artifacts for compliance with selected Process Area Base Practices and Generic Practices. Identify any missing elements or significant strengths. Documents results for later consolidation.
Appraisal Participants	If participative approach is used, guide appraisal team through documentation matrix mapping and project/organization documentation and artifacts. Provide additional references and clarification as needed.

### 3.2.3 Detailed Description, continued

#### DI 2.2.3

#### Review Documentation, continued

Data Manager/Site Coordinator	Locates and collects documentation needed by the appraisal team.
Site Coordinator	Assists appraisal team by arranging for space to store documentation and conduct documentation review.
Data Manager	Maintains accountability of documentation for the appraisal team.
Appraisal Team Leader	Keeps documentation review progressing according to appraisal activities schedule.

Table DI-3. Participants for Review Documentation

#### Inputs

Relevant project, program, and organization documents.  
Completed Documentation Matrices

#### Steps

Table DI-4 shows the steps for this process element.

Step	Description
Review documentation	The appraisal team walks through the documentation matrix comparing the project/organization documentation and artifacts to the FAA-iCMM guidelines. If this is a participative DI appraisal, the appraisal team can ask the appraisal participants for additional information to clarify or satisfy any particular BP or GP.
Document results	The appraisal team documents the missing items (weaknesses) or identifies significant strengths identified in the documentation. In a participative DI, review the strengths and weaknesses with the appraisal participants as each is developed.

Table DI-4. Steps for Review Documentation

#### Output(s)

Notes and observations from reviewed documentation.

### 3.2.3 Detailed Description, continued

---

<b>DI 2.2.3</b>	<b>Review Documentation, continued</b>
<b>Typical Duration/Effort</b>	On average, it will take about four hours per process area per project to review the documentation and record notes and observations.
<b>Notes</b>	Number of hours varies with the amount and type of documentation; also varies with type and scope of appraisal.

---

<b>DI 2.2.4</b>	<b>Consolidate Data</b>
<b>All paragraphs</b>	Disregard all references to interviews.
<b>Steps (Table 2-18) Check for Validity</b>	Do not perform the activity for corroboration. Data is only being gathered from one source in this method. Even with the participative method, the information gathered from the appraisal participants are not subject to the corroboration rules

---

<b>DI 2.2.5</b>	<b>Develop Draft Findings</b>
<b>Notes</b>	In many cases, the draft findings will be the final findings report presented to the sponsor since a draft presentation will not be done.

---

### 3.2.3 Detailed Description, continued

---

#### DI 2.2.6

#### **Present Draft Findings**

#### **Notes**

This is an optional activity.

If a non-participative style appraisal were conducted then this activity would be deleted.

If a participative style appraisal was done then this activity requires no changes to perform. Additionally, if each observation was reviewed with the Program representative on the appraisal team (in Review Documentation – DI 2.2.3) as it was entered, then there should be no need for a separate briefing.

It must be noted that this activity will add about a half day of time to the schedule. Since one of the reasons for doing a DI Appraisal is to get a “Quick Look” adding a half-day may in fact not be in step with the appraisal goals. It does however, offer the opportunity for buy-in and confirmation with the appraisal participants prior to presentation to the sponsor.

---

#### DI 2.2.8

#### **Steps (Table 2-34)**

#### **Review Suggested changes to findings**

#### **Develop Final Briefing**

If a non-participative style appraisal was done delete this step.

If a participative style was done and a draft briefing was decided upon then the appraisal team would conduct this step only if any changes were identified.

#### **Determine impact on rating profile**

This step is not performed.

---

#### **Notes**

This is an optional activity.

---

#### DI 2.2.10

#### **Present Final Briefing**

#### **Notes**

This is an optional activity.

The sponsor may request a separate briefing or the management team can be briefed at the same time as the sponsor (need sponsor approval to do this).

---

### 3.2.4 Toolkit Contents

---

The DI Appraisal Toolkit contents are listed below.

<b>Toolkit item</b>
Process Area Documentation Matrices
DI Appraisal Team Training Material
DI Appraisal Plan Template
Opening Meeting Slides
Appraisal Team Worksheets
Final Briefing Slides

## 3.3 Questionnaire-based Appraisal Description

---

### **In this section**

The following table provides a guide to the information found in this section:

<b>Topic</b>	<b>Page</b>
3.3.1 Introduction	3-46
3.3.2 Summary Description	3-50
3.3.3 Detailed Description	3-51
3.3.4 Toolkit Contents	3-74

### 3.3.1 Introduction

---

#### **Purpose**

The Questionnaire-based appraisal (QBA) is a method that can be used for rapidly measuring the status of an organization's process maturity between full FAM appraisals. It is primarily based on questionnaire data provided by a broad sample of appraisal participants. QBA is designed to be used by organizations that

- Have completed a full FAM appraisal
- Have a process improvement effort in place
- Intend to use the results for status monitoring and process improvement plan adjustment

QBA provides participating projects with individual status profiles and provides senior management with quantifiable data on the maturity status of the organization. These profiles represent a measure of the process maturity of projects and the organization, and provide visibility into process improvement progress. This allows for mid-course corrections and/or trend analysis of process changes.

A primary motivation for conducting a Questionnaire-based Appraisal is to allow members of the organization to communicate the status of the process that is currently in use in a manner that is consistent with the full internal appraisal method, but at lower cost.

This appraisal method allows for and encourages much broader participation than other methods and it provides focused feedback for members of participating projects. A goal of the method is to promote an ongoing discussion about process improvement.

QBA can be used as a stand-alone appraisal method or in conjunction with the Full Internal FAM or any of its variations.

### 3.3.1 Introduction, continued

---

**Purpose, continued**

A questionnaire-based appraisal is carried out as follows:

- Questionnaire is administered
- Results are summarized and analyzed
- Initial project profiles are built, reviewed, revised, and distributed
- Organizational profiles are built from project profiles, and distributed

The Project Profiles provide “interim ratings” for each process area in the scope of the appraisal, and include reliability factors for each participating project. “Interim ratings” are given as “Not Applicable,” “Not Rated,” “Not implemented,” “Implemented”, “Capability Level n (where n=2-5)”.

Organizational Profiles summarize the “interim ratings” provided for each process area by the percentage of projects receiving each rating. The reliability factors reported for each project are also summarized.

Note that these are not “official” ratings, which can only be determined by the full internal or external methods.

---

**QBA Roles**

These notes identify the key roles and functions they perform in a questionnaire-based appraisal. While one person cannot be responsible for all functions, it is likely that one individual will play multiple roles. Those responsible for process improvement (e.g., SEPG members) should play as many of the roles as possible.

Some of the roles described below are more specialized descriptions of specific functions played by members of the appraisal team or other roles, as described in Chapter 1.

---

Role	Description
Appraisal sponsor	The description in chapter 1 is appropriate

### 3.3.1 Introduction, continued

Role	Description
<b>Appraisal team leader</b>	The Appraisal Team Leader is authorized to lead questionnaire-based appraisals by the FAA Corporate SEPG, provides appraisal materials and guidance to the site coordinator and other roles as needed, trains the appraisal team on the model and the method, leads the appraisal process, provides FAA-iCMM expertise, and has experience preparing and making presentations.
<b>Site Coordinator</b>	The Site Coordinator arranges facilities and other resources for the appraisal, and schedules people and activities. This person has overall responsibility for on-site communication, logistics and setup.
<b>Organization appraisal representative</b>  <b>(Results Distributor)</b>  <b>(Results Reviewer)</b>	<p>The Organization appraisal representative is looked to as the organizational or site expert and is the point of contact for the appraisal team, especially for follow-up activities. This person has overall responsibility for determining how results should be distributed, overseeing the review of initial profiles, and finally gathering feedback from participants on the appraisal. During a QBA, the OAR also serves as:</p> <ul style="list-style-type: none"><li>• The <b>Results Distributor</b>, who oversees the distribution of draft and final profiles to the appropriate people in the organization, and</li><li>• The <b>Results Reviewer</b>, who is responsible for working with the participating projects after the initial profiles have been distributed. The person in this role must answer any questions that arise during the review of initial profiles. In situations where there are concerns regarding the initial profile, the Results Reviewer must work with the project to determine what additional information is needed to justify modification of the profile.</li></ul>

### 3.3.1 Introduction, continued

<b>Role</b>	<b>Description</b>
<b>Questionnaire Facilitator</b>	The Questionnaire Facilitator delivers the method overview and detailed instructions to the questionnaire respondents. The person in this role also answers questions from the participants during administration of the questionnaire, supervises the administration, and ensures that completed questionnaires are accurately labeled so that response data can be aggregated later. Several Questionnaire Facilitators may be required.
<b>Data Reducer</b>	The Data Reducer is responsible for inputting the questionnaire and participant data and summarizing the data according to the participating projects.
<b>Profile Builder</b>	The Profile Builder is responsible for building both initial and final profiles. This role requires individuals who are well experienced with the FAA-iCMM, have had appraisal training and have participated in at least one appraisal.
<b>Appraisal Participants</b>	Participants fill in questionnaires and attend review sessions. Typically, one participant for each project serves as point of contact for that project.

### 3.3.2 Summary Description

#### Introduction

The following table depicts the standard activities in conducting any FAM appraisal with QBA variations noted.

ID	FAM Activity Name	QBA Description	Remarks
<b>2.1</b>	<b>Plan and Prepare for Appraisal</b>		
2.1.1	Obtain Sponsor Commitment	No change.	
2.1.2	Select Appraisal Scope	Minor change.	Includes more detailed sample selection requirements.
2.1.3	Select Appraisal Team	No change	Includes selection of additional roles (see previous section)
2.1.4	Plan Appraisal Details	Minor change.	Emphasis on planning questionnaire administration (see notes)
2.1.5	Orient Participants	No change.	
2.1.6	Train Team	No change.	Less time required to train team. (about 1 day).
2.1.7	Administer Questionnaire	Major change.	Questionnaires are the major source of data for this appraisal.
2.1.8	Develop Exploratory Questions	Activity deleted.	No interviews.
<b>2.2</b>	<b>Conduct Appraisal</b>		
2.2.1	Conduct Opening Meeting	Activity deleted.	Covered during Administer Questionnaire activity.
2.2.2	Conduct Interviews	Activity deleted	
2.2.3	Review Documentation	Activity deleted	
2.2.4	Consolidate Data	Major change.	Questionnaire data are summarized
2.2.5	Develop Draft Findings	Major change.	Initial project profiles are built
2.2.6	Present Draft Findings	Minor change.	More details on results validation
2.2.7	Develop Ratings	Minor change.	Final profiles are built.
2.2.8	Develop Final Briefing	Minor change.	Final profiles are built.
2.2.9	Brief Sponsor	No change.	
2.2.10	Present Final Briefing	Minor change.	Final profiles are distributed.
2.2.11	Conduct Wrap-Up	No change.	
<b>2.3</b>	<b>Report Results</b>		
2.3.1	Prepare and Deliver Appraisal Report	Activity deleted	Appraisal results are delivered in Present Final Briefing.
2.3.2	Manage Records	Minor change	More details on types of records

### 3.3.3 Detailed Description

---

#### QBA 2.1.2

#### Select Appraisal Scope

---

#### Notes

- **Selecting participating projects.** Part of selecting appraisal scope is identifying the population or pool of potential participants for the appraisal. During initial discussions with the sponsor, it is necessary to document the scope of the effort with a rough estimate of the number of divisions, projects, and respondents who will participate. An organization chart may help, or the sponsor may specify the participating projects and individuals.
  - **Project characteristics to consider.** To enable informed selection of projects, a project questionnaire could be used to collect information about the size, status, and life cycle phase of potential projects. Projects and life cycle phases should be well represented. The FAM project questionnaire can be used.
  - **Sample selection guidance.** As a heuristic, a minimum of 60% of the organization's projects should be selected, and at least 60% of the personnel in the selected projects should be included. These are guidelines and may not be practical for organizations with many small projects or few large projects. Participation should be limited to projects with at least three representatives to preserve anonymity. Broad participation is particularly important for this questionnaire-based approach since outputs may be viewed as unreliable where only a small minority of the project team participates.
-

### 3.3.3 Detailed Description, continued

---

#### QBA 2.1.4

---

#### Plan Appraisal Details

---

#### Summary

Since this is a questionnaire-based appraisal, no interviews are conducted and no documentation is requested from appraisal participants. Much of the appraisal planning details center on questionnaire administration, as described below.

---

#### Steps

Step	Description
Schedule and Set Up Questionnaire Administration	Multiple sessions are set up to make completion of the questionnaire as convenient as possible and to minimize the amount of disruption to the work force. The sessions last approximately two hours, the first 30 minutes of each session consisting of an overview of the method's purpose, scope, outputs, and use.
Identify Questionnaire Facilitator(s)	<p>Questionnaires are completed by participants in a supervised administration. This is done in order to minimize differences in interpretation among the respondents, as well as the potential impacts of social pressures, which might influence respondents. If issues causing confusion for the respondents are not clarified quickly and uniformly, then the comparability of the response data is threatened.</p> <p>The number of Questionnaire Facilitators needed for each session should be determined by the number of people completing the questionnaire, as well as their level of familiarity with the FAA-iCMM. In organizations that have had only one appraisal and minimal experience with the FAA-iCMM, one Questionnaire Facilitator per 25 respondents is recommended.</p>

### 3.3.3 Detailed Description, continued

QBA 2.1.4

#### Plan Appraisal Details, continued

Step	Description
Notify Projects	<p>All projects identified for inclusion in the Orient Participants step must be notified of available dates and times. The projects must confirm the information regarding the makeup of the project and the availability of the staff.</p> <p>Low participation rates for one or more of the projects may increase the risk of results being viewed as inaccurate by non-participating project members. It is recommended that 100% participation be the goal with a minimum participation rate of 60%</p>
Prepare Materials	<p>The materials to be used during data collection must be inventoried and reviewed by the people who will oversee the data collection. At this time, the On-Site Coordinator and the Questionnaire Facilitator should review the terms found on the questionnaire, which might be confusing to participants. For each term identified a local definition must be supplied based on an understanding of both the FAA-iCMM and the local vernacular.</p> <p>In addition, the On-Site Coordinator should create a roster for each session, listing the people scheduled for that session. This roster should then be used to track attendance rates for each project. If low attendance rates are detected early, additional sessions may be scheduled or projects can be dropped from participation.</p>

Table QBA-1. Steps for Plan Appraisal Details

### 3.3.3 Detailed Description, continued

---

#### QBA 2.1.7

---

#### Administer Questionnaire

---

##### Purpose

The purposes of Administer Questionnaire during a QBA are:

- to collect candid responses to the questionnaire in a setting that minimizes disruption and external influences, while maximizing efficiency
  - to prevent misunderstandings regarding the purpose of the QBA, as well as the content of the questionnaire
- 

##### Summary description

The questionnaire is administered. There are 3 key activities carried out in each session:

- Provide Method Overview
  - Facilitate the session
  - Track Materials
- 

##### Entry criteria

- Respondents scheduled for the sessions are in attendance
- 

##### Exit criteria

- Questionnaires are completed
- 

##### Roles

Table QBA-2 lists the roles involved in this step.

Role	Summary
Questionnaire Facilitator	Presents method overview, answers questions during the session as required, tracks completed questionnaires
Appraisal participants	Complete questionnaire

**Table QBA-2. Participants for QBA Administer Questionnaire.**

---

##### Inputs

- Session roster
  - Blank questionnaires
- 

*continued on next page*

### 3.3.3 Detailed Description, continued

#### QBA 2.1.7

#### Administer Questionnaire, continued

#### Steps

Table QBA-3 shows the steps for this activity.

Step	Description
Present overview	The Questionnaire Facilitator (QF) presents an overview of the method, stressing the importance of the respondents' input as well as the confidentiality guidelines. Basic instructions for how to complete the questionnaire and how to resolve ambiguities are then provided
Facilitate session	While the respondents complete the questionnaire, the QF answers questions and clarifies issues for respondents. The QF's role is to minimize the impact of terminology issues, and to ensure that all respondents have a common understanding of the issues being probed by the questionnaire. In doing this, it is vital that the respondents provide their individual views rather than a group view, which might be derived through discussion with others in the room.
Track materials	As respondents finish, the QF is responsible for tracking completed forms and ensuring that the identification of individuals and their associated projects is clearly recorded on the questionnaires for use later in summarizing the data. Mishaps here can lead to significant delays in producing outputs.

**Table QBA-3. Steps for QBA Administer Questionnaire**

### 3.3.3 Detailed Description, continued

**QBA 2.1.7**

---

**Administer Questionnaire, continued**

---

**Outputs**

- Completed questionnaires
- 

**Typical  
Duration/Effort**

- Typical calendar duration: Two hours per session over as many days as are needed
  - Typical level of effort: Two hours per respondent
- 

**Notes**

Key issues to keep in mind are

- The questionnaire is not a test. Responses do not reflect people's knowledge or ability
  - Specific responses of individuals must never be disclosed. Data are only reported in aggregate form on the profiles
  - The goal of the method is to promote an ongoing discussion about process improvement.
-

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.4

---

#### Consolidate Data

---

#### Purpose

The purpose of Consolidate Data in a QBA is to summarize the data provided by a large group of respondents in a form that can be used to create initial profiles.

---

#### Summary description

Prior to making initial “ratings”, the information provided on the set of questionnaires for each project must be summarized for manageability. Completed questionnaires are consolidated into summary reports. This process involves

- Take questionnaire inventory
  - Summarize response data
  - Summarize reliability factors
- 

#### Entry criteria

- Completed questionnaires are available
- 

#### Exit criteria

- Questionnaire data are consolidated
- 

#### Roles

Table QBA-4 lists the roles involved in this step.

Role	Summary
Data Reducer	Consolidates questionnaire data by project

**Table QBA-4. Participants for QBA Consolidate Data.**

---

#### Inputs

- Completed questionnaires
- 

*continued on next page*

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.4 Consolidate Data, continued

---

##### Steps

Table QBA-5 shows the steps for this activity.

Step	Description
Take inventory	<p>Take inventory of the set of questionnaires. Doing so will ensure proper identification of each respondent and his/her affiliation with one of the projects. Cases where a single respondent is associated with more than one project must be resolved. In some situations it may be necessary to accommodate a single respondent's data in two different projects.</p> <p>Based on this inventory and the planned participation rate for each project, additional administrations may be scheduled, or exclusion of projects with limited participation may be necessary.</p>
Summarize response data	<p>All the data gathered from questionnaire respondents must be summarized for use in building profiles. For each project, the following response data must be summarized:</p> <ul style="list-style-type: none"><li>• The number and percentage of Yes, No, Does Not Apply, and Do Not Know responses to each question.</li><li>• "Yes" degree of confidence for each question – the percentage of "yes" responses given with high confidence (i.e. &gt; 3)</li><li>• "No" degree of confidence for each question – the percentage of "no" responses given with high confidence (i.e. &gt;3).</li><li>• All comments written by project staff in response to each question.</li></ul>

### 3.3.3 Detailed Description, continued

#### QBA 2.2.4

#### Consolidate Data, continued

Summarize reliability factors	<p>In addition to responses and comments, a summary of the reliability factors is prepared for each project. There are 5 summary statistics to be reported for each participating project, which represent a type of “margin of error” for assessing the results. The statistics include:</p> <ul style="list-style-type: none"><li>• “Yes” degree of confidence – the percentage of all “yes” responses given with high confidence</li><li>• Overall degree of confidence – the percentage of all questionnaire responses given with high confidence (including all responses other than “Don’t Know”)</li><li>• Percentage of group responding – the percentage of staff in the project who participated</li><li>• Percentage of respondents who are relatively new to the field – the percentage of the respondents in the project who fall below the 25<sup>th</sup> percentile for years of experience relative to all participants regardless of which project they are from.</li><li>• Percentage of respondents who are relatively more experienced in the field – the percentage of the respondents in the project who fall above the 75<sup>th</sup> percentile for years of experience relative to all participants.</li></ul>
-------------------------------	---

Table QBA-5. Steps for QBA Consolidate Data

#### Outputs

- Summary report of questionnaire data consolidated for each project

#### Typical Duration/Effort

- Typical calendar duration: 1 week
- Typical level of effort: 1 person week for about 200 respondents

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.4 Consolidate Data, continued

---

##### Notes

Here is an example of a summary report for one particular question regarding controlling changes to configuration items/units.

Project	Sample Size/ Project Total (%)	Yes	No	N/A	D/K	Strong Yes's	Strong No's
Able	100/200 (50%)	83 83%	12 12%	3 3%	2 2%	78%	80%
Baker	20/25 (80%)	11 55%	7 35%	0 0%	2 10%	82%	75%
Charlie	5/5 (100%)	4 80%	0 0%	0 0%	1 20%	75%	60%
Delta	75/150 (50%)	65 87%	8 11%	1 1%	1 1%	85%	80%
Comments: Able D/K I didn't understand this question Yes Our configuration control board has a charter and defined procedures to support the charter Delta Yes I was trained on this procedure last week Yes We hold weekly CCB meetings to discuss this							

In this example, 100 of the 200 people in project Able completed a questionnaire. Eighty-three of these 100 participants answered “yes” to the question summarized. Of those 83 “yes” responses, 78% of them were strong “yes’s” (i.e. they gave a confidence rating >3). For project Delta, 65 of the 75 participants said “yes”, which equals 87% of the project participants. The listing of comments under the table shows that one of the respondents who answered D/K (don’t know) wrote a comment. Note also that none of the respondents for projects Baker and Charlie wrote a comment on this question.

---

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.5

#### Develop Draft Findings

---

##### Purpose

The purpose of Develop Draft Findings in a QBA is to examine the patterns of data from each project and develop initial profiles that are consistent with what respondents communicated in their questionnaires.

---

##### Summary description

The consolidated questionnaire data are analyzed and used to derive initial profiles for each project. This activity involves the following steps:

- Rate items
  - Rate process areas
  - Include reliability factors
  - Draft project profiles
- 

##### Entry criteria

- Questionnaire data are consolidated and summarized
- 

##### Exit criteria

- Draft initial profiles are completed
- 

##### Roles

Table QBA-6 lists the roles involved in this step.

Role	Summary
Profile Builder	Builds initial profile

Table QBA-6. Participants for QBA Develop Draft Findings

---

##### Inputs

- Questionnaire summary report
- 

*continued on next page*

### 3.3.3 Detailed Description, continued

#### QBA 2.2.5

#### Develop Draft Findings, continued

#### Steps

Table QBA-7 shows the steps for this activity.

Step	Description
Rate Items	<ul style="list-style-type: none"><li>• Apply item-rating process (see notes). This produces a suggested rating of “yes” or “no” for each item for each project.</li><li>• Look for borderline cases where appropriate. Ratings may need further analysis and additional judgement is required.</li><li>• Read comments. Comments often provide the most compelling information for making rating judgments.</li></ul>
Rate Process Areas	<ul style="list-style-type: none"><li>• Apply process area rating process (see notes). This produces a suggested rating of “not applicable,” “not rated,” “not implemented,” “implemented” or “institutionalized at capability level n” for each applicable (within scope) process area for each project.</li><li>• Look for borderline cases. A final check must be performed before transferring the data to initial profiles.</li></ul>
Include Reliability Factors	<p>The 5 statistics discussed in “Consolidate Data” are included on the profile:</p> <ul style="list-style-type: none"><li>• “Yes” degree of confidence</li><li>• Overall degree of confidence</li><li>• Percentage of group responding</li><li>• Percentage of respondents who are relatively new to the field</li><li>• Percentage of respondents who are relatively more experienced in the field .</li></ul>
Draft Project Profiles	<p>Project profiles are drafted. Revisions may be necessary before they are final and the data can be summarized at the organizational level.</p>

Table QBA-7. Steps for QBA Develop Draft Findings

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.5

#### Develop Draft Findings, continued

---

#### Outputs

- Initial profiles for each participating project
- 

#### Typical Duration/Effort

- Typical calendar duration: 3-6 hours
  - Typical level of effort: 3-6 hours per person
- 

#### Notes

The item rating process

The item rating process for individual questions (items) about process areas is:

1. Check that 60% of project personnel have responded. A lower response rate may indicate insufficient data for rating purposes in which case the item may be rated as “not rated.” If the items of a process area are “not rated”, the process area is excluded from process area rating, (The process area is rated as “not rated”).
  2. Determine if the item applies. If more than 80% of the respondents answer “does not apply” to an item, then the Profile Builder must determine whether the practices described in that item apply to the project. If the practices do not apply, then the item is rated as “not applicable”.
  3. If at least 80% of the responses were “yes” and at least 50% of the “yes” answers were accompanied by a confidence rating greater than 3, then the item is rated as “yes”
  4. If neither a “yes” nor “not applicable” is warranted, the item is rated as “no”.
-

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.5

---

#### Develop Draft Findings, continued

---

#### Notes, continued

The process area rating process

The rating process for process areas is:

1. If any item for this process area was “not rated” the process area is “not rated.”
  2. If all goal-related and/or practice-related items for this process area were “not applicable” then the process area is “not applicable”.
  3. If the applicable process area goal-related items are not all rated as “yes”, or if the applicable process area practice-related items are not all rated as “yes”, then the process area is “not implemented”.
  4. If the applicable process area goal-related items are all rated “yes”, or if the applicable process area practice-related items are all rated “yes”, then the process area is “implemented”
  5. If the process area is “implemented” and in addition the capability level 2-through-n related items (“institutionalization goal and generic practice items”) pertaining to this process area are all rated as “yes” then the process area is rated as “institutionalized at capability level n” where n = 2-5. For example:
    - If PA is implemented, and not all CL2 items are “yes”, PA is “implemented”
    - If PA is implemented, and all CL2 items are “yes”, PA is rated “institutionalized at capability level 2”
    - If PA is implemented, and all CL2 and some (not all) CL3 items are “yes”, PA is rated “institutionalized at capability level 2”.
-

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.5

---

#### Develop Draft Findings, continued

---

#### Notes, continued

Borderline cases

Borderline cases require professional judgment based on an examination of all information available including response patterns and written comments. Here are some examples of borderline cases, possible actions to take, and rationale.

Borderline Case	Possible Action	Rationale for Possible Action
A PA is Implemented (all goal and/or practice related items are rated “yes”). All, except one, of the capability level 2 items are rated “yes”. Rule says rate Implemented, not at CL 2.	Because the PA is very close to CL2 the team considers rating the PA at Capability Level 2 rather than Implemented.	Respondent’s comments have referenced sound alternatives in answering capability level 2 related items.
All but one of the PA goal-related items are rated “yes”; most of the institutionalization items are rated “yes”. Rule says rate “Not-implemented”.	Rate the PA “Implemented” rather than “Not Implemented”	Respondent’s comments indicate a possible lack of communication in answering PA goal-related items.



### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.6

---

#### Present Draft Findings

---

#### Summary

The validation that occurs during this activity is vital to the ongoing communication that this method is designed to support. Participants are presented with draft project profiles, instructions for interpreting the profiles, and instructions for contacting the Results Reviewer. Participants meet to review their profiles and schedule meetings with the Results Reviewer as needed. Upon completion of the review, final project profiles are created by the Profile Builder.

---

#### Notes

**Distribution** Initial draft profiles are distributed only to the point of contact designated for each project. This is typically the project leader. Guidelines for interpreting the profiles and suggestions for validating results with project participants are provided along with the profiles.

---

**Review Questions** Participating projects are typically provided with several questions to consider while reviewing the initial profile. These questions should be provided in written instructions and may include the following.

- How do these results compare to results from past appraisals?
  - Do the reliability factors show high or low confidence?
  - Are there enough people from the project represented in the data?
  - Which process areas are rated as not implemented, implemented, or at a capability level? Do these make sense?
  - Which areas are currently the focus of process improvement activities? Do the ratings confirm improvements made?
  - Are there areas where ratings don't look right?
  - Where weaknesses exist, are there current plans to address them?
  - Are there areas where recommendations could be provided?
- 

**Review Process** The review process may be tailored to include a variety of activities, as will be discussed below. However, the basic process of reviewing and revising initial profiles involves meetings between the Results Reviewer and the project participants. Project artifacts and historical information are reviewed, and the group discusses progress on the organization's action plan.

These meetings must be facilitated in order to ensure proper interpretation of the purpose of this appraisal method.

### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.6

---

#### Present Draft Findings, continued

---

#### Notes, continued

**What can be revised?** First identify why the profile is perceived to be inaccurate. Possible reasons for proposing a revision to the project profile include:

- One or more PA ratings is incorrect
  - Inadequate participation rates lead to questionable ratings in some areas
- 

**Defining an issue.** The items in the questionnaire may require some translation and interpretation. The role of the results reviewer is to help participants in the review meeting to see what aspects of their process are being probed. When explaining the FAA-iCMM, the goals of each PA typically serve as the focal point, with implementation of specific practices being viewed as enablers to the goals.

---

**Gathering new data.** In making revisions to the initial profiles the Results Reviewer must seek additional information at the questionnaire item level, not just information relating to the PA. In doing this, the Results Reviewer must draw on experience with the FAA-iCMM and process improvement.

Group meetings with project members and review of project and organizational artifacts are the two additional data collection activities used. Reviewing the findings of past appraisals and actions taken on their basis will provide valuable input as well.

---

**Making judgements.** QBA emphasizes use of documentation and other artifacts during the review process. This emphasis places more stringent requirements than traditional project leader interviews. The Results Reviewer must establish the presence of processes using documents or other lasting artifacts to support their professional judgments. No explicit criteria for documentation are provided, as the nature of this type of artifact varies widely from organization to organization.

---

### 3.3.3 Detailed Description, continued

#### QBA 2.2.6

#### Present Draft Findings, continued

##### Notes, continued

**Revising the project profile.** The Results Reviewer and the Profile Builder make revisions. First annotate the original response data for each item with the new data collected. Next, the results Reviewer and the Profile Builder must revisit the PAs in question and re-rate the items as “yes” or “no” for the project. Once each item has been sufficiently considered, the process for rating PAs is again applied (exactly as it was when the initial ratings were generated).

**Retaining records.** It is important to retain both the original draft and final profiles on record. Systematic examination of the types of changes made to initial profiles for an organization may yield important topics for discussion when explaining the organizational profile. For example, consistently under rated PAs may indicate the need for communicating a recent change that is not yet widely known.

**Goals of validation.** The resolution of validation issues must be completed within a designated time frame (generally one to two weeks) and cannot be a subjective, persuasive exercise. The final profiles need to accurately represent the organization, and at the same time provide usable information to the staff. In addition to the standard review and revision process described above, there are some other ways to make use of this opportunity to involve project staff in process improvement.

**Optional review activities.** QBA was designed to be used as an integral part of an organization’s process improvement effort. As such, there are tailoring decisions that can be made to suit specific organizational needs. The table below represents three possible scenarios and the tailoring decisions one might make.

	Conditions	Motivation	Activity
Simple Status Feedback	Organization has an established process improvement effort	Ongoing SEPG service	Review meetings on exception basis
Engage Project Staff	Organization has pockets of staff who are uninformed about process improvement efforts.	Pro-active gesture to get participation	Scheduled project discussions regarding initial profile
Leverage Best Practice and New Ideas	Organization has pockets of process excellence	Sponsorship of technical interchange	Scheduled functional area meetings for peer to peer presentations of process ideas.

### 3.3.3 Detailed Description, continued

QBA 2.2.7  
QBA 2.2.8

---

#### Develop Ratings, and Develop Final Briefing

---

#### Notes

Interim ratings were generated in Develop Draft Findings and validated in Present Draft Findings. Thus, at this point in the QBA process, individual project profiles are in their final form. The last “rating” aspect of QBA is to create an organizational summary based on project-level information. This, combined with the individual project profiles, becomes the Final Briefing.

---

#### Organizational profiles

Organizational profiles contain the same 2 main components described for the project profiles. On the organizational profile, the interim ratings provided for each process area are summarized by the percentage of projects receiving each rating. Thus for each PA, the organizational profile lists the percentage of projects rated as Not Implemented, Implemented, Institutionalized at capability Level n, Not Rated, or Not Applicable.

The reliability factors reported for each project are also summarized. A sample of the resulting organizational profile is provided on the next page.

QBA may derive more than one level of organizational profile, depending on the sponsor and scope of the appraisal.

---



### 3.3.3 Detailed Description, continued

---

#### QBA 2.2.10

#### Present Final Briefing

---

##### Distribution Notes

The lasting artifacts of the method are distributed to the appropriate people in the organization. These artifacts – final project and organizational profiles – document the organization's status. However, the profiles are only a small part of the outcomes of the QBA.

The distribution of results may take a variety of forms depending on the needs of the organization. Some of the choices for presentation of the final profiles include:

- Distribution of the organizational profile to every member of the organization
- Distribution of the organizational profile to only the sponsor
- Formal presentation of the organizational profile in an auditorium
- A workshop to go over the organizational and project profiles with recommendations
- A complete written report elaborating the outcomes in more detail

Project profiles are never distributed outside the project. If project profiles are to be shared with senior management, they are provided by the project, not by the Results Distributor.

The organizational profile is distributed to the sponsor(s), and the project profiles are distributed to the project points of contact.

Organizational profiles are public to all members of the organization. They are distributed to the senior management team prior to distribution to the entire organization.

Finalized project profiles are distributed to the project points of contact that received the initial profiles. These profiles are treated as confidential.

---

### 3.3.3 Detailed Description, continued

---

#### QBA 2.3.3

---

#### Manage Records

---

##### Notes

- **Records to Archive** The Results Reviewer must maintain all records regarding conduct of the QBA until there is no chance of inquiry for more details. Following this period (typically 3-4 weeks) the following things should be archived at the process improvement organization for future use:
  - Organizational Profile
  - Project Profiles for all projects
  - Summary reports used for rating
  - Initial profiles for all projects
  - The schedule for the conduct of the QBA annotated with actual events and effort expended
  - The list of potentially problematic FAA-iCMM terms
  
- **Items to Destroy** Any remaining artifacts should be destroyed in a secure manner to preserve the confidentiality of respondent information. The items to be destroyed include:
  - Completed questionnaires identifying respondents
  - All notes taken that are already summarized in the archived data
  - All unnecessary records which could cause a breach in confidentiality

Retention of appropriate records will allow the analysis of process improvements over time and will facilitate planning of future appraisals.

### 3.3.4 Toolkit Contents

---

**The QBA Toolkit**     The QBA toolkit contents are listed below.

Topic
QBA Questionnaire
QBA Data Processing Guide
QBA Training Material
QBA Sample Briefings
QBA Profile Templates

## 3.4 Interview Based Appraisal Method Description

---

### Contents

The following table provides a guide to the information found in this section:

Topic	Page
3.4.1 Introduction	3-76
3.4.2 Summary Description	3-78
3.4.3 Detailed Description	3-79
3.4.4 Toolkit Contents	3-88

---

### 3.4.1 Introduction

---

#### **Purpose**

The Interview Based appraisal method (IB Appraisal) allows a high level/generic view into several or all of an organization's process areas with the output being the identification of major strengths and weaknesses and those areas needing process improvement or management attention.

The IB appraisal method provides an overall picture of an organization's process development without the rigors of intensive document review or formal comment corroboration. It may serve to focus or refocus an improvement effort.

The IB appraisal method will generally not result in any type of capability level or maturity level rating. It will identify weaknesses or other issues that need attention. This method determines if the basic process structures are in place and producing the desired results. This, along with organizational priorities and process plans, should result in successful preparation for a full FAM.

The IB appraisal method focuses on information about an organization's processes collected during interviews with project and technical area leads and practitioners from that organization.

It does allow for the IB appraisal team to guide the project manager(s) through the initial questionnaire and to provide additional insight into the appraisal process.

The interviews may be supported by documentary evidence: however, the intent is to determine higher level or cross-process cultural/workplace affecting the process areas of the appraised organization.

### 3.4.1 Introduction, continued

---

The following table shows the various roles of people involved in the IB:

<b>Role</b>	<b>Description</b>
Sponsor	The description in chapter 1 is appropriate.
Appraisal Team Lead (ATL)	The description in chapter 1 is appropriate.
Organization Appraisal Representative (OAR)	The description in chapter 1 is appropriate.
Appraisal Team	The description in chapter 1 is appropriate.
Site Coordinator	The description in chapter 1 is appropriate.
Data Manager	The description in chapter 1 is appropriate.
Appraisal Participant(s)	The description in chapter 1 is appropriate.

### 3.4.2 Summary Description, continued

ID	FAM Activity Name	IB Description	Remarks
<b>2.1</b>	<b>Plan and Prepare for the Appraisal</b>		
2.1.1	Obtain Sponsor Commitment	No change	
2.1.2	Select Appraisal Scope	No change	
2.1.3	Select Appraisal Team	Minor change	The size of the appraisal team is typically smaller.
2.1.4	Plan Appraisal Details	Minor change	Little or no emphasis on documentary evidence and artifacts.
2.1.5	Orient Participants	No change	
2.1.6	Train Team	No change.	Less time required for training.
2.1.7	Administer Questionnaire	No change	
2.1.8	Develop Exploratory Questions	Minor change	Questions are more generic in nature.
<b>2.2</b>	<b>Conduct Appraisal</b>		
2.2.1	Conduct Opening Meeting	No change	Describe generic nature of expected results
2.2.2	Conduct Interviews	Minor change.	Group interview sessions are essentially free form.
2.2.3	Review Documentation	No change.	Optional since documentation is incidental to the method
2.2.4	Consolidate Data	Minor change.	Focus is on accuracy and validity of data. Sufficiency is not specifically verified.
2.2.4 A	Development Preliminary Findings	New activity	
2.2.4 B	Review Preliminary Findings	New activity	
2.2.5	Develop Draft Findings	Minor change.	Findings tend to be fewer in number, not necessarily based on individual process areas, but most likely generic or cultural in nature.
2.2.6	Present Draft Findings	No change.	
2.2.7	Develop Ratings	Activity deleted.	
2.2.8	Develop Final Briefing	Minor change	No steps related to ratings.
2.2.9	Brief Sponsor	No change.	
2.2.10	Present Final Briefing	No change	
2.2.11	Conduct Wrap-Up	No change.	
<b>2.3</b>	<b>Report Results</b>		
2.3.1	Prepare and Deliver Appraisal Report	Optional	Without ratings final report detailing findings and recommendations may be sufficient for reporting purposes.
2.3.2	Manage Records	No change.	

### 3.4.3 Detailed Description, continued

---

<b>IB 2.1.3</b>	<b>Select Appraisal Team</b>
-----------------	------------------------------

<b>Notes: additional comments</b>
-----------------------------------

The size of the appraisal team varies based on the number of PAs and Projects (or complexity of the organization) selected. The size of the appraisal team will generally be on the lower side of the range because there is much less focus on documentation.
--

---

<b>IB 2.1.4</b>	<b>Plan Appraisal Details</b>
-----------------	-------------------------------

<b>Table 2-9, Step Request Documentation</b>
--

IB appraisal deletes Request Documentation because the emphasis is on data from questionnaires supported by information collected during interview sessions. Documentation is not specifically requested for review in this method.
---

---

<b>Outputs</b>
----------------

Delete the requirement for requests for documentation or artifacts.
---

---

<b>IB 2.1.8</b>	<b>Develop Exploratory Questions</b>
-----------------	--------------------------------------

<b>Entry Criteria</b>
-----------------------

Delete criterion that documentation has been received.
--

---

<b>Notes</b>
--------------

The exploratory questions will be used as icebreakers to open the discussions for the group interview sessions and to keep the discussions going or guide the direction of the discussion if they bog down or go too far off subject. Also, exploratory questions are used to direct lead interviews.
---

---

### 3.4.3 Detailed Description, continued

---

#### IB 2.2.2

#### Conduct Interviews

##### Purpose

The purpose of Conduct Interviews is to collect information from appraisal participants (leads and practitioners) that will supplement the questionnaire data and enable the appraisal team to develop findings based on process areas and/or generic/cultural issues. While individual interview sessions are similar to the full FAM, group sessions are less structured to facilitate interactive discussion. This is the primary means of collecting and verifying information related to process performance and process improvement.

---

#### IB 2.2.4

#### Consolidate Data

##### Notes: additional comments

The essential difference is that the focus is on accuracy and that findings should be based on data from two separate sources. These two sources may have been in the same interview session. However the IB method still checks for coverage of appraisal scope.

---

##### Steps (Table 2-18) Check for sufficiency

This step is not performed.

---

### 3.4.3 Detailed Description, continued

---

#### IB 2.2.4A

#### Develop Preliminary Findings

---

##### Purpose

The purpose of Develop Preliminary Findings is to develop findings for each process area investigated in the appraisal – based on a first analysis of the consolidated observations.

---

##### Summary description

Develop Preliminary Findings involves analyzing the consolidated observations and synthesizing them into a manageable set for incorporation into a presentation to the project/program/system/technical leads.

---

##### Entry criteria

- Data has been consolidated
  - Team consensus that adequate coverage has been obtained
- 

##### Exit criteria

- Consensus is obtained on a set of preliminary findings (often 40-60 in number) which can be presented to the leads for verification.
- 

##### Roles

Table IB-1 lists the roles involved in this activity.

Role	Summary
Appraisal team leader	Provides expertise on the FAA-iCMM and the appraisal method and guides the team in forming consensus.
Appraisal team	Develops preliminary findings Achieves or forms consensus

**Table IB-1. Participants for Develop Draft Findings.**

---

*continued on next page*

### 3.4.3 Detailed Description, continued

---

#### IB 2.2.4A      **Develop preliminary findings, continued**

---

- Inputs**
- Consolidated data
  - Template for findings
- 

**Steps**      Table IB-2 shows the steps for this activity.

Step	Description
Develop preliminary findings	Review the observations. Identify those major issues for each PA that need to be presented to the appraised organization. There are sometimes local issues that must be addressed if the appraisal is to have credibility with the participants. These may be identified as non-FAA-iCMM or cultural findings.
Prioritize findings	Prioritization is based on business goals, if available, or on the team's consensus on the major barriers to improvement in the organization.
Form consensus	Each finding is presented to the team for edit and consensus. The team <i>must</i> agree that these findings represent what was heard and will be presented for review.  This step continues until consensus is achieved. If consensus is not achieved the finding should not be used.
Prepare briefing charts	The findings are placed on briefing charts for presentation.

**Table IB-2. Steps for Develop Preliminary Findings**

- 
- Outputs**
- Preliminary findings
- 

**Typical duration/effort**      Typical duration: Four to eight hours  
Typical level of effort: 4 - 8 team hours

---

*continued on next page*

### 3.4.3 Detailed Description, continued

**IB 2.2.4A**

---

**Develop preliminary findings, continued**

---

**Notes**

A preliminary finding is:

- Worded correctly (clear, does not use absolutes, expressed in site terms, and non-attributable to person or project)
  - A group of observations, either strengths or weaknesses.
  - Based on information from two sources
-

### 3.4.3 Detailed Description, continued

---

#### IB 2.2.4B

#### Review Preliminary Findings

---

##### Purpose

The purpose of Review Preliminary Findings is to allow each “lead” an individual opportunity to provide feedback on the preliminary findings and to validate that these preliminary findings represent the information provided during data gathering. These sessions are important in establishing the credibility of the appraisal with the “leads” and for providing assistance to the appraisal team for the synthesis of the preliminary findings into 5-10 draft findings.

---

##### Summary description

Review Preliminary Findings involves presenting the preliminary findings to the “leads” or managers as a group so that they may provide comments.

---

##### Entry Criteria

- Preliminary findings slides prepared
- 

##### Exit Criteria

- Presentation of preliminary findings complete.
  - Participant comments recorded and findings are updated.
- 

##### Roles

Table IB-3 lists the roles involved in this activity.

Role	Summary
Appraisal team leader or OAR	Presents the preliminary findings. Solicits comments from participants. (“leads”). Facilitates the feedback portion of the meeting.
Appraisal team	Observes reactions of participants to findings, and takes notes on the feedback. Modify findings as needed and come to consensus on the findings.
Appraisal participants	Listen to findings presentation; provide feedback on whether the appraisal team captured what is happening in the organization. Offer improvements.

**Table IB-3. Participants for Present Draft Findings.**

---

##### Inputs

- Preliminary findings slides (from activity 2.2.4A)

### 3.4.3 Detailed Description, continued

#### IB 2.2.4B

#### Review Preliminary Findings, continued

#### Steps

Table IB-4 shows the steps for this activity.

Step	Description
Introduction	<p>The appraisal team greets the “lead” at the beginning of each session and provides an update of appraisal activities. Then the team explains that this is a session to review “preliminary” findings and that the findings will be further synthesized into a set of 5-10 draft findings.</p> <p>The team reminds each lead that the findings should not be discussed outside of this session – i.e., that nothing is final until the final briefing is conducted.</p>
Present findings	<p>Present the preliminary findings to each lead. The following questions are used:</p> <ul style="list-style-type: none"><li>• Do you agree/disagree this finding applies to your project?</li><li>• Do you agree/disagree this finding applies to your organization?</li></ul> <p>Appraisal team members in attendance take notes on feedback and comments from “leads”</p>
Closing	<p>After all of the findings have been presented the session leader asks the “lead” what one thing – other than salary or supervisor – would each of them like to see changed in their organization</p> <p>Also the session leader asks each “lead” to name an organizational strength – other than the staff.</p> <p>Remind participants of the time for the presentation of the draft findings and emphasize that this is an opportunity to interact with the practitioners who participated in the appraisal.</p>
Review suggested changes to findings	<p>Not all requested changes will be accepted; particularly, ones that do not add to the critical issues of the appraisal. The information received in the Preliminary Findings session will be treated as data obtained from another data collection session. The team must come to consensus on the changes before they are made.</p>

**Table IB-4. Steps for Review Preliminary Findings**

### 3.4.3 Detailed Description, continued

---

**IB 2.2.4B**

---

**Review Preliminary Findings, continued**

---

**Outputs**

- Notes by team
  - Updated findings
- 

**Typical duration/  
effort**

Typical duration: 2 hours

Typical level of effort: 1 hour per lead, 2 hours to update findings

---

**Notes**

Feedback helps to validate and gather consensus of the need for change.

Ask the participants to keep findings to themselves until after the findings briefing.

The leads may review preliminary findings in parallel sessions providing at least two members of the appraisal team attend each.

---

### 3.4.3 Detailed Description, continued

---

**IB 2.2.5****Develop Draft Findings****Input**

Preliminary findings and feedback from previous activity.

---

**Step from Table 2-29****Develop draft findings**

Instead of reviewing the observations, the appraisal will review the preliminary findings and feedback comments from the “leads.” Then the team will proceed as in a full FAM except that the result may be 5-10 findings in total rather than 5-10 for each process area.

---

**Notes**

The findings will be more generic or cultural in nature – i.e., the findings will be more general and cross process areas.

---

**IB 2.2.8****Develop Final Briefing****Notes**

No steps related to ratings are performed.

---

### 3.4.4 Toolkit Contents

---

#### Toolkit Contents

The IB Toolkit contents are listed below

Sponsor Brief
Appraisal Plan Template
Appraisal Training Materials
Organizational Questionnaire
Appraisal Participants Orientation Brief
QBA Questionnaire
QBA Administration Brief
Opening Brief
Consolidation Worksheet
Draft Findings Brief (may also be used for preliminary findings)
Final Findings Brief

---

# 3.5 Full External Evaluation

**Contents**

The following table provides a guide to the information found in this section:

Topic	Page
3.5.1 Introduction	3-90
3.5.2 Summary Description	3-92
3.5.3 Detailed Description	3-93
3.5.4 Toolkit	3-100

### 3.5.1 Introduction

---

#### **Purpose**

The purpose of the Full External (FE) evaluation method is to specify how an external organization would perform an independent evaluation based on the FAA-iCMM.

The FE method uses the full internal FAM as the standard method and tailors it to allow the FAM to be used to conduct an external evaluation.

Principles of the Software Capability Evaluation (SCE) method, version 3, have been incorporated. The SCE defines three uses, or variations, of the method: Supplier Selection, Process Monitoring, and Internal Evaluation. The Supplier Selection SCE is used by an external procurement organization for the evaluation of a potential offeror, typically in a competitive solicitation. The Process Monitoring SCE is used by one external organization for the evaluation of another organization. An example is the evaluation of the FAA by the General Accounting Office (GAO). The Internal Evaluation SCE is used by an organization who contracts with an external SCE team to perform an evaluation, for example, as preparation for a potential SCE or to validate process improvement gains.

---

### 3.5.1 Introduction, continued

#### Roles

The following table shows the various roles of the people involved in the FE:

Role	Description
Sponsor	External organization or individual who provides resources for the appraisal team and notifies the appraised organization authority of the upcoming evaluation. In most cases, the sponsor is not directly involved in follow-up process improvement activities.
Appraised Organization Authority	Notified by the sponsor of the intended evaluation. Designates an OAR as the point of contact for the evaluation. Commits resources for the appraisal. Receives the final audit report if appropriate.
Organizational Appraisal Representative (OAR)	Establishes link between the appraised organization and the evaluation team. Organizes projects to be appraised and coordinates resources in preparation for the evaluation. Establishes contact with the external organization point of contact and coordinates logistic arrangements. The OAR is typically not a member of the appraisal team.
Site coordinator	The description in Chapter 1 is appropriate.
Appraisal Participants	The description in Chapter 1 is appropriate.
Appraisal Team	The description in Chapter 1 is appropriate.
Appraisal Team Leader (ATL)	The description in Chapter 1 is appropriate.
Data Manager	The description in Chapter 1 is appropriate.

## 3.5.2 Summary Description

ID	FAM Activity Name	FE Description	Remarks
<b>2.1</b>	<b>Plan and Prepare for the Appraisal</b>		
2.1.1	Obtain Sponsor Commitment	Minor change	Notifies organization of pending evaluation
2.1.2	Select Appraisal Scope	Minor change	Determined by evaluating organization; questionnaire is administered.
2.1.3	Select Appraisal Team	Minor change	Evaluating organization selects team
2.1.4	Plan Appraisal Details	No change	
2.1.5	Orient Participants	Minor change	OAR orients participants
2.1.6	Train Team	Minor change	FAA can provide this training
2.1.7	Administer Questionnaire	Minor change	OAR coordinates and provides responses to the appraisal team and this activity is carried out as part of 2.1.2
2.1.8	Develop Exploratory Questions	No change	
<b>2.2</b>	<b>Conduct Appraisal</b>		
2.2.1	Conduct Opening Meeting	Minor change	Sponsor is not there.
2.2.2	Conduct Interviews	No change	
2.2.3	Review Documentation	No change	
2.2.4	Consolidate Data	No change	
2.2.5	Develop Draft Findings	No change	
2.2.6	Present Draft Findings	No change	Optional for Supplier Selection
2.2.7	Develop Ratings	Minor change	Optional based on purpose of evaluation
2.2.8	Develop Final Briefing	Minor change	Optional based on purpose of evaluation
2.2.9	Brief Sponsor	Minor change	Optional based on purpose of evaluation
2.2.10	Present Final Briefing	Minor change	Optional based on purpose of evaluation
2.2.11	Conduct Wrap-Up	Minor change	OAR records lessons learned
<b>2.3</b>	<b>Report Results</b>		
2.3.1	Prepare and Deliver Appraisal Report	Minor change	Prepared by evaluating organization.
2.3.2	Manage Records	Minor change	Appraised and appraising organizations both perform this.

### 3.5.3 Detailed Description

---

#### FE 2.1.1

#### Obtain Sponsor Commitment

##### Summary description

The organization to be appraised is notified of the impending evaluation by the evaluating organization. In this case, the sponsor is the authority at the evaluating organization who orders the evaluation. The appraised organization authority appoints an OAR and Site coordinator. In some cases these may be one and the same person. The OAR coordinates with the appraisal team leader (ATL) and organizational resources in order to prepare for the evaluation.

---

#### FE 2.1.2

#### Select Appraisal Scope

##### Summary description

The sponsor, OAR and the ATL coordinate to identify candidate projects for the appraisal and the groups that will provide participants. Typically the scope will be determined by the external organization, and the OAR is notified of that scope, but does not participate in setting the scope.

---

#### Entry Criteria

The appraised organization authority has agreed to the evaluation

---

#### Step, Request and Review Information

The ATL may request the following information from the OAR at this time:

- Process Improvement Plan. This is used to determine the status of the organization's process improvement activities.
- Project Questionnaire for each of the projects, which are offered for evaluation. These are used to help scope the evaluation.
- Proposed Project Attributes in cases where a new project is the basis for the evaluation.

Administer QBA questionnaire

### 3.5.3 Detailed Description, continued

---

#### FE 2.1.2

#### Select Appraisal Scope, continued

##### Step, Finalize appraisal scope

The Proposed Project Attributes, Process Improvement Plan, and Project Questionnaires are used to determine the projects that will be evaluated and the process areas that will be included.

The Proposed Project Attributes are used when the evaluation is triggered by the need to evaluate the capability of the organization to acquire a new system/product. It provides a view of a project that the appraised organization is planning to undertake and is used by the appraisal team to determine the types of experience required for the project and help scope the evaluation.

The appraisal team may use a Mismatch Identification Table to assist in this activity. The Mismatch Identification Table contrasts the attributes of the proposed project and the project represented by the project questionnaire data. The result is an experience match across the projects offered for evaluation.

---

##### Inputs

- Process Improvement Plan
  - QBA Questionnaire results
  - Project Questionnaires
  - Proposed Project Attributes
-

### 3.5.3 Detailed Description, continued

---

#### FE 2.1.2

#### Select Appraisal Scope, continued

---

##### Notes

Here is an example of a mismatch table where XXX, YYY, and ZZZ are existing projects that completed the project questionnaire. The focus of this example is software specific.

Project	XXX	YYY	ZZZ	Overall
Size	X	X	X	X
Duration		X	X	
Estimated size (software)		X		
Reuse Percent (software)	X	X		
Type of Work				
Development Team Approach				
Language(s)		X	X	
Applicable Standards				
Precedence	X	X	X	X

The Project Questionnaires are compared to the Proposed Project Attributes. Where there is a mismatch, i.e., there is a significant difference between the attribute in the project and the corresponding attribute in the proposed project, an X indicates the mismatch.

An X in the overall column indicates that there is a mismatch between the proposed project and all of the projects being considered for the appraisal. Where there is no overall mismatch it indicates that there is experience within the organization in that area. If there are significant differences in the overall column the appraisal organization could ask that other projects be selected for the appraisal with a better match.

The presence of several X's in the project columns could also indicate possible risk areas for the proposed project. For example, if reuse is a requirement for the new project, the appraisal team may wish to focus on PAs that bear on this attribute, for example, PA 04, Alternatives.

---

### 3.5.3 Detailed Description, continued

---

**FE 2.1.3  
Notes****Select Appraisal Team**

The identification and selection of the appraisal team is normally provided by the sponsoring organization. This team is typically formed from external people. It is possible for the appraised organization to have a member or observer on the team. The observer serves to facilitate the evaluation through identification of FAA appraisal participants and documentation. It is to the benefit of the appraised organization to have an observer on the team to help ensure that the team does not reach conclusions based on a lack of or poor information.

---

**FE 2.1.5  
Notes****Orient Participants**

The OAR without involvement of the appraisal team would normally conduct this activity. When conducted it is identical to the full FAM except that appraisal team members may not be involved.

---

**FE 2.1.6  
Notes****Train Team**

The ATL may request team training from the FAA. Training could include the FAA-iCMM, the FAM, and the FE. The OAR should coordinate with the FAA SEPG for the conduct of this training.

---

**FE 2.1.7  
Notes****Administer Questionnaire**

This is conducted as part of 2.1.2 The OAR will coordinate the administration of the questionnaire with the ATL and arrange for administering the questionnaire within the appraised organization. The administration of the questionnaire is similar to the procedure described in the FAM. Notice that the questionnaire should be administered prior to selecting the scope of the appraisal in order to select appropriate projects and process areas. One questionnaire per candidate project is typical.

---

### 3.5.3 Detailed Description, continued

---

#### FE 2.2.1

#### Conduct Opening Meeting

##### Notes

The opening meeting is similar to an opening meeting conducted in an internal appraisal, however, the perspective is different since it is an evaluation. It is still in the best interest of the appraised organization to present a full and accurate picture of their process improvement program and the projects that will participate in the evaluation.

If not done during Train Team, the appraised organization may optionally present a general briefing on their process improvement program and the projects within the scope of the evaluation. The presentation should focus on the state of the process improvement program, especially as it relates to the scope of the FE (e.g., if focused on acquisition, acquisition activities would be focused on). The idea is to concentrate on how the improvement program is progressing and the current state of the process. It is important to present an accurate and positive portrayal of the process improvement program to the FE appraisal team, as well as an overview of the programs that have been selected to participate in the FE.

It is advisable that the Appraised Organization Authority attend this meeting.

---

#### FE 2.2.7

#### Develop Ratings

##### Notes

This is optional as determined by the sponsor.

---

#### FE 2.2.8

#### Develop Final Briefing

##### Notes

This activity is optional. It is typically used in an Internal Evaluation when, through prior agreement, the external organization agrees to brief the appraised organization at the close of the evaluation.

---

### 3.5.3 Detailed Description, continued

---

#### **FE 2.2.9**

#### **Brief Sponsor**

#### **Notes**

In this case, “brief sponsor” refers to a briefing to the Appraised Organization Authority. This activity is normally not conducted during an FE evaluation. It would only be conducted at the option of the evaluating organization or team. If conducted it is identical to the final sponsor briefing of the FAM except that the team may choose not to give ratings to the Appraised Organization Authority.

---

#### **FE 2.2.10**

#### **Present Final Briefing**

#### **Notes**

This activity is normally not conducted during an FE evaluation. It would only be conducted at the option of the evaluating organization or team. If conducted it is identical to the sponsor brief, as described in FE 2.2.9.

---

#### **FE 2.2.11**

#### **Conduct Wrap-Up**

#### **Notes**

The OAR should prepare a report based on the content of FAM 2.3.1 in order to capture lessons learned. These should be based on the OAR’s observations depending on his/her overall involvement in the appraisal. This report should be provided to the FAA SEPG.

---

### 3.5.3 Detailed Description, continued

---

#### **FE 2.3.1**

#### **Prepare and Deliver Appraisal Report**

#### **Notes**

A final report is normally prepared according to the evaluating organization's policy and procedures.

---

#### **FE 2.3.2**

#### **Manage Appraisal Records**

#### **Notes**

These are managed by the FE team with the exception of those records that may have been recorded by the OAR.

---

### 3.5.4 Toolkit Contents

---

Toolkit

The FE Toolkit contents are listed below.

Project Questionnaire
Proposed Project Attributes
Mismatch Identification Table

## Appendix A: Definitions and Acronym Expansions

---

<b>activity</b>	Any step taken or function performed, both mental and physical, toward achieving some objective. [SW-CMM v1.1]
<b>advocate</b>	Individual or organization publicly espousing process improvement.
<b>appraisal</b>	The act of comparing an organization's operations to an activity-based model or standard. An appraisal may be an evaluation or audit (seeking accurate results) or an assessment (seeking buy-in or agreement with results and the need for changes based on them). (CCF)
<b>appraisal participants</b>	Leads and practitioners who participate in information gathering sessions or who otherwise provide information to appraisal team
<b>appraisal team</b>	Individuals who actually conduct appraisal.
<b>appraisal team leader</b>	Member of appraisal team who leads appraisal effort.
<b>assess</b>	To appraise, in particular, with the primary objective of seeking buy-in or agreement with the results for the purpose of motivating changes based on them.
<b>attribute</b>	A characteristic of an item, e.g., the item's color, size, or type. A measurable physical or abstract property of an entity.
<b>audit</b>	An independent examination of a work product or set of work products to assess compliance with specifications, standards, contractual agreements, or other criteria. An audit is an appraisal that primarily seeks an accurate comparison of an organization's behavior or operations against a model by expert examination of the physical outputs of those operations.
<b>capability</b>	<i>see</i> process capability.
<b>capability evaluation</b>	An independent process appraisal by a trained team of professionals. [SEI]

## Appendix A: Definitions and Acronym Expansions

---

<b>capability maturity model</b>	<p>A capability maturity model (CMM) for a given domain is a model that describes the key elements of an effective process for the domain. It also describes an evolutionary improvement path of five stages from an ad hoc, immature process to a disciplined, mature process with improved quality and effectiveness.</p> <p>Associated with the model one or more process appraisal methods that facilitate the determination of current process capabilities and/or identifies the most critical issues for improved quality and process effectiveness. [CCF]</p>
<b>CMM</b>	Capability maturity model
<b>commitment</b>	A pact that is freely assumed, visible, and expected to be kept by all parties. [SW-CMM v1.1]
<b>data tracking sheet</b>	A worksheet, usually automated as spreadsheet or word processor file, that is used to show patterns in answers from respondents to appraisal questions about reference model goals or practices. May also be used as a basis for decisions on rating goals, practices, process areas, or maturity levels if updated appropriately during the appraisal.
<b>domain</b>	A subject area that provides some benefit(s) to practitioners to perform. Examples include software or systems engineering, human resources, marketing, finance, facilities construction, renovations and demolition, catering, hospital operating or emergency rooms, and legal or professional advice.
<b>draft finding</b>	A finding that is in the form: title, finding statement, symptoms (or causes, observations), and consequences. The symptoms and consequences entries are usually validated preliminary findings from the appraisal.
<b>DTS</b>	Data tracking sheet
<b>effective process</b>	A series of actions that, when properly performed, produce the intended result (e.g., the desired state change in an object). Given several equally effective processes, their relative efficiency, in terms of resource consumption, can be empirically determined. An effective process can be characterized as practiced, documented, enforced, trained, measured, and able to improve.
<b>enterprise</b>	The legal entity within which an organization resides. A unit within a

## Appendix A: Definitions and Acronym Expansions

---

	legal entity or spanning several entities, within which one or more projects is managed as a whole. All projects within an enterprise, at the top of the reporting structure, share a common manager and common policies (See also <i>organization</i> .)
<b>evaluate</b>	To examine and judge carefully. In particular, an audit or primarily accuracy-seeking appraisal form.
<b>executive</b>	A management role at a high enough level in an organization that the primary focus is the long-term vitality of the organization, rather than short-term project and contractual concerns and pressures
<b>exploratory question</b>	A question that elicits an explanation rather than yes/no answer used to involve interviewees and focus groups in describing practices and their strengths and weaknesses during an appraisal.
<b>finding, findings</b>	A, or the, conclusion(s) of an appraisal, assessment, evaluation, audit, or review that identify the most important issues, problems, or opportunities within the area of investigation.
<b>implementation model</b>	A description of not only what, but how people, methods, materiel, and equipment are applied to produce an output or outcome. An organization's process description would be an implementation model of the reference model to the extent that it described how the organization performs the "whats" in the reference model.
<b>implemented process</b>	The process that members of projects in the organization <i>actually</i> do. Same as <i>performed</i> or <i>actual process</i> .
<b>infrastructure</b>	All the systematic elements needed to sustain an initiative or effort. These are at a minimum, people's skills and knowledge or the training to transition them into use, methods or techniques, materiel (inputs), facilities, and tools which may or may not be automated.
<b>institutionalization</b>	The building and reinforcement of infrastructure and corporate culture that supports methods, practices, and procedures so that they are the ongoing way of doing business, even after those who originally defined them are gone. [CCF]

## Appendix A: Definitions and Acronym Expansions

---

<b>integrated product team</b>	A team that includes members who are critical stakeholders to product success and have accountability for producing it, including later life cycle disciplines. It may also include non-member interfaces to less critical stakeholders, and affected groups that are not users (such as community representatives downwind of a chemical plant).
<b>interview script</b>	The actual exploratory questions and guidance provided to an interview session of leader(s) or practitioners during an appraisal. See the appropriate checklists in Appendix E, Training Support Materials.
<b>IPT</b>	integrated product team
<b>leads</b>	Senior technical or program staff members with broad project, domain, or discipline.
<b>life cycle</b>	The scope of the systems or product evolution beginning with the identification of a perceived customer need, addressing development, test, manufacturing, operation, support and training activities, continuing through various upgrades or evolutions, until the product and its related processes are disposed of. [IEEE 93]
<b>manager</b>	A role that provides technical and/or administrative direction and control. Typical functions of a manager include allocating resources, motivating, organizing, directing, controlling, and work within of responsibility. [SW-CMM v1.1, P-CMM]
<b>model</b>	A simplified representation of a part of the real world. [Lave & March]
<b>normative</b>	Of, relating to, or prescribing, a norm or standard
<b>normative model</b>	A model that prescribes behavior to achieve a goal. [Lave & March]
<b>organization</b>	<p>A unit within an enterprise, the whole (legal) enterprise or other entity (e.g., government agency or branch of service), within which many projects are managed as a whole. All projects within an organization typically share common policies at the top of the reporting structure. An organization may consist of collocated or geographically distributed projects and supporting infrastructures.</p> <p>An autonomous entity within a company, government agency or military branch. Organizations typically have responsibility for planning, allocating resources, motivation, organizing, directing, controlling, and improving their people, processes and technologies.</p>

## Appendix A: Definitions and Acronym Expansions

---

	<p>The term “organization” is used to connote an infrastructure that supports common strategic, business, and process-related functions. The infrastructure exists and must be maintained for the business to be effective in producing, delivering, supporting, and marketing its products. The organization is the "permanent" part of the business entity that encompasses what is commonly termed the "corporate memory.”</p>
<b>organization appraisal representative</b>	Individual member of appraisal team who is from organization undergoing appraisal; acts as liaison between appraisal team and organization.
<b>organizational maturity</b>	<i>see</i> organizational process maturity.
<b>organizational process</b>	A process described at the organizational level for use by projects in the organization. It may be a set of processes in order to capture the different products of processes that might be produced by an organization. It is intended that the <i>organizational process</i> be tailored into a <i>defined process</i> to meet the needs of specific projects. Synonyms include <i>organizational standard process</i> , <i>standard process</i> .
<b>organizational process maturity</b>	<p>The extent to which an organization has explicitly and consistently deployed processes that are documented, managed, measured, controlled, and continually improving.</p> <p>Note: Organizational maturity may be measured via a process appraisal.</p>
<b>organizational process assets</b>	<i>see</i> process asset library
<hr/>	
<b>PA</b>	process area
<b>participants</b>	Leads and practitioners who participate in appraisal by providing data to appraisal team.

## Appendix A: Definitions and Acronym Expansions

---

<b>performance</b>	<p>A quantitative measure characterizing a physical or functional attribute relating to the execution of a mission or function. Performance attributes include quantity (how many or how much), quality (how well), coverage (how much area, how far), timeliness (how responsive, how frequent), and readiness (availability, mean time between failures).</p> <p>Performance is an attribute for all products, processes, and their associated personnel, including those for development, production, verification, deployment, operations, support, training, and disposal. Thus, supportability parameters, manufacturing process variability, reliability, and so forth, all performance measures.</p>
<b>performed process</b>	<p>What the members of the organization <i>actually</i> do. Also referred to as the “implemented” or “actual process.”</p>
<b>policy</b>	<p>Guiding principle designed to influence and determine decisions, actions, and other matters. [derived from American Heritage]</p>
<b>practitioners</b>	<p>Technical, engineering, contract, or programmatic staff members who provide project level information to appraisal team, generally by participation in group interview sessions.</p>
<b>procedure</b>	<p>A description of a course of action to be taken to perform a given task.</p>
<b>process</b>	<p>A set of activities performed to achieve a given purpose. Any specific combination of machines, tools, methods, materials, and/or people employed to attain specific qualities in a product or service. The associated activities may be performed separately, iteratively, interleaved, recursively, or concurrently. Some activities transform inputs into outputs needed for other activities.</p>
<b>process area</b>	<p>A defined set of activities, that, when performed collectively, can achieve the purpose of the PA. The activities are called base practices (BPs). Performing the BPs in the organization’s implemented process is considered essential to achieve the purpose of the PA. Hence, the BPs are requirements to gain the value of the PA for the organization.</p> <p>The types of process areas covered in the FAA-iCMM are process management, systems engineering, systems acquisition, and supporting process areas.</p>
<b>process assessment</b>	<p>To appraise the capability of an organization’s processes with respect to one or more reference models. In particular, an assessment is primarily focused on gathering buy-in to the need for change.</p>
<b>process asset</b>	<p>A collection of process assets, maintained by an organization, for use by</p>

## Appendix A: Definitions and Acronym Expansions

---

<b>library</b>	projects in developing, tailoring, maintaining, and implementing their defined processes. This collection exists within a defined architecture that gives structure to the example processes, process fragments, process-related documentation, process architectures, process tailoring rules and tools, and process measurements.
<b>process assets</b>	<p>A collection of entities, maintained by an organization, for use by projects in developing, tailoring, maintaining, and implementing their processes. These process assets typically include</p> <ul style="list-style-type: none"><li>• the organization standard processes,</li><li>• descriptions of the life cycle models approved for use on software projects,</li><li>• the guidelines and criteria for tailoring the organization's standard processes,</li><li>• the organization's measurement database, and</li><li>• a library of process-related documentation</li></ul> <p>Any entity that the organization considers useful in performing the activities of process definition and maintenance could be included as a process asset.</p>
<b>process capability</b>	The range of expected results that can be achieved by following a process. [SW-CMM] Projects in low capability organizations experience wide variations in their actuals to estimates for cost, schedule, and quality. The process capability aspect of the FAA-iCMM reflects statistical process control concepts and provides guidance to improve that process capability.
<b>process capability baseline</b>	A documented characterization or model that defines the process capability of a specific process, i.e., the range of expected results that can be achieved by following the process. A process capability baseline is typically established at an organizational level.
<b>process capability profile</b>	A summary of all relevant FAA-iCMM process areas listed with their assessed FAA-iCMM capability levels.

## Appendix A: Definitions and Acronym Expansions

---

<b>process effectiveness</b>	Process effectiveness is the results against expectations of performing a process. These results are based on an organizational context that includes many attributes in addition to its process-related attributes. The aspects of effectiveness measured by CMMs are the approach to the process, and its deployment. The approach is characterized by practices that are expected to produce increased benefit when performed appropriately in their organizational context. The deployment is characterized by goals that reflect the end state that performing a group of practices would be expected to exhibit. Despite the inability to measure all aspects of process effectiveness via CMMs, a wealth of anecdotal, and building empirical evidence for CMMs indicates that measuring the approach and deployment does provide an indicator of expected results, within boundaries of reasonable fluctuations of other factors. [Herbsleb 94]
<b>process group</b>	A group of specialists that facilitates the definition, maintenance, and improvement of the process(es) used by the organization.
<b>process management</b>	The set of activities, methods, and tools applied to the definition, implementation, and monitoring of a process. Process management implies that a process is defined (since one cannot predict or control something that is undefined). The focus on process management implies that a project or organization takes into account both product- and process-related factors in planning, performance, evaluation, monitoring, and corrective action.
<b>process maturity</b>	<p>The extent to which a process is explicitly documented, managed, measured, controlled, and continually improved.</p> <p>Note: Process maturity may be measured via a process assessment.</p>
<b>process measures</b>	Measurable attributes of the <i>process</i> used to produce the product, such as resources expended per product or percent rework.
<b>process performance</b>	A measure of actual results achieved by following a process. [Bate - SEI]
<b>process performance baseline</b>	A documented characterization or model of a process that is used as a benchmark for comparing actual process performance against the expected process performance. A process performance baseline is typically established at the project level, as the process is implemented, although the initial process performance baseline will usually be derived from the process capability baseline. See process capability baseline for contrast.

## Appendix A: Definitions and Acronym Expansions

---

<b>process performance data</b>	Measurements that are used to manage the process used on your project or in your organization. These are measures of the actual results achieved using the process.
<b>process tailoring</b>	To make, alter, or adapt a process description for a particular end. For example, a project tailors its defined process from the organization's set of standard processes to meet the constraints & environment of the project. [Adapted from American Heritage, 1976]
<b>product</b>	Result of activities or processes. Something produced by human or mechanical effort or by a natural process. As used in the CMM, something designed for delivery to a customer or end user.
<b>project</b>	An organizational unit dedicated to achieving defined objectives that satisfy a need or desire within time, budget, and technical performance specifications. [Cleland] The aggregate of effort and other resources focused on developing and/or maintaining a specific product. The product may include hardware, software, other components, and/or services. Typically a project has its project manager, funding, cost accounting, and delivery schedule. A project may constitute an organizational entity of its own, or it may be structured as a team, task force, or other entity used by the organization to produce products.
<b>project manager</b>	A manager with responsibility for an entire project. The project manager directs, controls, administers and regulates a project. [SW-CMM v1.1]
<b>project's defined process</b>	The operational definition of the process as used by a specific project. Well characterized and understood, it is described in terms of roles, standards, procedures, tools, and methods. It is developed by tailoring the organizational process to fit the specific characteristics and objectives of the project.
<b>rating</b>	The activities that lead to team consensus on practice satisfaction and accumulate to process area capability level satisfaction and maturity level satisfaction, or the results of those activities in terms of an organizational Maturity Level and process capability profile that supports it.
<b>reference model</b>	A model that is used as a benchmark for measuring some attribute.

## Appendix A: Definitions and Acronym Expansions

---

<b>repeatable process</b>	<p>Set of activities performed to achieve a given purpose that is:</p> <ul style="list-style-type: none"><li>• guided by organizational policies</li><li>• documented and planned,</li><li>• allocated adequate resources (including funding, people, and tools),</li><li>• staffed with responsibilities assigned,</li><li>• implemented by trained individuals</li><li>• measured,</li><li>• tracked with appropriate corrective actions, and</li><li>• reviewed by appropriate levels of management,</li></ul> <p>Work products of a repeatable process are, as appropriate:</p> <ul style="list-style-type: none"><li>• reviewed by affected parties,</li><li>• compliant with specified standards, and</li><li>• placed under change control or configuration management.</li></ul>
<b>resourcing, resourced</b>	<p>Having to do with identifying, acquiring, and applying or deploying resources needed by a process or activity including people, budget, environment, facilities, supplies, etc</p>
<b>responsibility</b>	<p>A duty to provide, or contribute in a particular way to providing, a specified output or outcome, and the accountability to provide those expected results.</p>
<b>risk</b>	<p>Possibility of suffering harm or loss. [American Heritage, 1976]</p>
<b>role</b>	<p>A unit of defined responsibilities that may be assumed by one or more individuals.</p>
<b>role independence</b>	<p>The process areas of the FAA-iCMM are groups of practice that, when taken together, achieve a common purpose. However, the groupings are not intended to imply that a single individual or role necessarily performs all the base practices of a process. All base practices are written in verb-object format (i.e., without a specific subject) so as to minimize the perception that a particular base practice “belongs to” a particular role. This is one way in which the syntax of the model supports its use across a wide spectrum of organizational contexts.</p>
<b>senior manager</b>	<p>A management role at a high enough level in an organization that the primary focus is the long-term vitality of the organization, rather than short-term project and contractual concerns and pressures. (Synonyms include <i>executive</i>)</p>
<b>site coordinator</b>	<p>Individual who makes all logistical arrangements for appraisal and</p>

## Appendix A: Definitions and Acronym Expansions

---

	manages that part of the effort during appraisal - usually a member of organization being appraised.
<b>software capability evaluation</b>	<i>see</i> capability evaluation.
<b>sponsor</b>	Individual under whose auspices appraisal is being conducted - usually a manager or executive of that organization.
<b>stakeholder</b>	Anyone affected by, or germane to, a product during its life cycle (including disposal) is a stakeholder. Some are more important to product and organizational success than others are. One issue in IPD is how extensively stakeholders should be represented.
<b>standard</b>	An acknowledgement measure of comparison for quantitative or qualitative value, criterion. [American Heritage #2a]
<b>supplier</b>	The entity who produces a product for a customer. The customer and supplier may be members of the same organization. [IEEE 1074-1991]
<hr/>	
<b>tailor</b>	To make, alter, or adapt, for a particular end. [American Heritage, 1976]
<b>task</b>	Well-defined unit of work in a process that provides a visible checkpoint into the status of the product of the process. Tasks have readiness (entry) criteria and completion (exit) criteria. Activities are informal tasks or steps within a task.
<b>TBD</b>	To be defined or determined in a later version
<b>team</b>	A work group that is mutually responsible for the achieving the group's goals. Teams usually are limited to four to eight members, but may include interface representatives to stakeholders in the team's goals, and appear much larger, as in teams of team representatives, for example.
<b>technology</b>	The tools, equipment, techniques, and methods that can be applied by people to accomplish a particular result.
<b>traceability</b>	Able to track to its origins, source, or deployment as in requirements or customer needs being traceable to design, test plans, and product features or functions, and vice versa.

## Appendix A: Definitions and Acronym Expansions

---

**transitioned** Indicates that a tool, technique, method, process, or product has been placed into use in an operational environment where it was not used before. The implication is that personnel users were trained, and the method or product is actually the way that they do work or the object that they use now.

---

**user** An individual that uses a product to perform a specific function or accomplish an objective or outcome. Consumers of physical products are users or end users. Users may also include operators of the product or its components if it is a system, or recipients of the results of the product use (indirect customers who benefit from product use).

**well-defined process** A process with entry criteria, inputs, task descriptions, verification descriptions and criteria, outputs, and exit criteria that are documented, consistent, and complete. [SPICE - modified].

**work group** A set of individuals assigned to produce or provide an output or outcome.

**work product** (1) Anything produced by a process. This includes the data, files, documents, assemblies, components, work-in-progress, specifications, invoices, etc., generated in the course of performing any process. [CCF]  
(2) Result of activities or processes. For example, the data, files, documents, assemblies, components, etc. generated in the course of performing any process.

For example, work products of a review activity might be action item lists, whereas work products of a requirements process might be a database file containing all the elaborated requirements for the product. Rather than call out individual work products for each process area, the FAA-iCMM lists “typical work products” of a particular base practice, to elaborate further the intended scope of that base practice. These lists are not to be construed as “mandatory” work products; they are illustrative only, and reflect a range of organizational and product contexts.

Note: a work product may or may not be delivered to a customer or end user.

---

*end of Appendix A*

## Appendix B: References

---

[FAA-iCMM]	The Federal Aviation Administration Integrated Capability Maturity Model (FAA-iCMM), Version 1.0, Linda Ibrahim et. al, November 1997.
[CAF]	CMM Appraisal Framework, Version 1.0, Steve Masters and Carol Bothwell, CMU/SEI-95-TR-001, February 1995.
[CBA-IPI]	CMM-Based Appraisal for Internal Process Improvement (CBA IPI): Method Description, Donna Dunaway and Steve Masters, CMU/SEI-96-TR-007, April 1996.
[SCE]	Software Capability Evaluation, v3.0 Method Description, Paul Byrnes and Mike Phillips, CMU/SEI-96-TR-002, April 1996.
[SAM]	A Description of the Systems Engineering Capability Maturity Model Appraisal Method, Version 1.0, Suzanne Garcia et. al., CMU/SEI-94-HB-05, June 1995.
[IP]	Interim Profile: Development and Trial of a Method to Rapidly Measure Software Engineering Maturity Status, Roselyn Whitney et. al, CMU/SEI-94-TR-4, March 1994.
[SPICE - 15504]	ISO/IEC TR 15504 Information Technology – Software Process Assessment, consisting of 9 parts:  ISO/IEC TR 15504-1: 1998(E) Concepts and introductory guide ISO/IEC TR 15504-2: 1998(E) A reference model for processes and process capability ISO/IEC TR 15504-3: 1998(E) Performing an assessment ISO/IEC TR 15504-4: 1998(E) Guide to performing assessments ISO/IEC TR 15504-5: 1998(E) An assessment model and indicator guidance ISO/IEC TR 15504-6: 1998(E) Guide to competence of assessors ISO/IEC TR 15504-7: 1998(E) Guide for use in process improvement ISO/IEC TR 15504-8: 1998(E) Guide for use in determining supplier process capability ISO/IEC TR 15504-9: 1998(E) Vocabulary

---



# Appendix C: Traceability Matrix to CMM Appraisal Framework (CAF) Requirements

## Introduction

The following provides the map of the FAM, v1.0 activities and outputs to the CMM Appraisal Framework (CAF), v1.0 requirements for a CMM-based appraisal. It provides the requirement line item cross reference to where each CAF requirement is addressed in this appraisal method.

This CAF mapping is of the full FAA-iCMM appraisal method, and not of its variations.

The FAA-iCMM is the model used for FAM. The CMM for Software (v1.1) is included in the FAA-iCMM, as well as the SE-CMM (v1.1) and the SA-CMM (v1.01). Since the FAA-iCMM is represented using a continuous architecture with staging, it includes constructs not in the CMM for Software (such as goals for capability levels). These will be noted as appropriate in the mapping.

The expected readers of this appendix include FAM lead appraisers who would use this appendix for tailoring purposes, e.g. nothing from these CAF based requirements should be tailored out when the full FAM method is applied.

# Requirements Traceability Matrix for CMM Appraisal Framework (CAF)

The CAF is a standard against which appraisal methods can be compared. Compliance generally means that the appraisal method will provide an accurate, repeatable set of findings and ratings according to the model, if used in its domain of reference.

## FAM/CAF conformance matrix

Requirement in CAF 1.0	FAM Paragraph
R1. Method documentation references: <ul style="list-style-type: none"> <li>Reference to CMM version</li> <li>Reference to CAF version</li> <li>How it implements CAF appraisal activities</li> <li>How it implements CAF appraisal artifacts</li> <li>How it implements CAF appraisal guidance</li> </ul>	1.2 Context and usage  Chapter 1. Introduction to the FAA-iCMM Appraisal Method and this Appendix  Chapter 2. FAM Process Description  Each FAM activity description in Chapter 2 includes input and output artifacts. In addition, guidance material provides tailoring guidance regarding artifacts.  Appraisal Guidance material
R2. Guidance on: <ul style="list-style-type: none"> <li>Planning and preparing for appraisal</li> <li>Conducting appraisal</li> <li>Reporting results</li> </ul>	2.1 Plan and Prepare for the Appraisal  2.2 Conduct Appraisal  2.3 Report Results
R3. Guidance for: <ul style="list-style-type: none"> <li>Identifying appraisal goals</li> <li>Identifying appraisal constraints</li> <li>Determining suitability with respect to goals/constraints</li> </ul>	2.1.1 Obtain Sponsor Commitment 2.1.2 Select Appraisal Scope 2.1.4 Plan Appraisal Details  2.1.2 Select Appraisal Scope 2.1.4 Plan Appraisal Details  1.2 Context for Appraisals 2.1.1 Obtain Sponsor Commitment 2.1.4 Plan Appraisal Details

**Table C-1. Requirements Traceability Matrix**

## Requirements Traceability Matrix, continued

FAM/CAF conformance  
matrix, continued

Requirement	FAM Paragraph
R4. Guidance to select CMM scope	2.1.2 Select Appraisal Scope
R5. Guidance to select organizational scope	2.1.2 Select Appraisal Scope
R6. Guidance to obtain organization. commitment	2.1.2 Obtain Sponsor Commitment 2.1.4 Plan Appraisal Details
R7. Appraisal team qualification criteria: <ul style="list-style-type: none"> <li>• &gt;= 5 yrs experience for majority of team</li> <li>• &gt;= 25 yrs experience total on team</li> <li>• &gt;= 6 yrs management experience for one team member</li> <li>• &gt;= 10 yrs management experience total for team</li> </ul>	1.3 Appraisal Roles 2.1.3 Select Appraisal Team
R8. Appraisal team leader has experience <ul style="list-style-type: none"> <li>• Using appraisal method</li> <li>• Managing teams</li> <li>• Facilitating group discussions</li> <li>• Making presentations</li> </ul>	1.3 Appraisal Roles
R9. Guidance for determining appropriate team size	2.1.3 Select Appraisal Team Appraisal Guidance material
R10. Guidance on preparing a team to do appraisal	2.1.6 Train Team
R11. Guidance for site selection	2.1.2 Select Appraisal Scope Appraisal Guidance material
R12. Guidance for project selection	2.1.2 Select Appraisal Scope Appraisal Guidance material
R13. Guidance for participant selection	2.1.2 Select Appraisal Scope Appraisal Guidance material
R14. Guidance for appraisal participant orientation	2.1.5 Orient Participants Appraisal Guidance material
R15. Guidance for appraisal planning: <ul style="list-style-type: none"> <li>• Identifies appraisal goals</li> <li>• Identifies appraisal scope</li> <li>• Identifies appraisal activities</li> <li>• Provides appraisal schedule</li> <li>• Identifies resources</li> <li>• Identifies outputs and their usage</li> <li>• Identifies anticipated follow-on activities</li> <li>• Documents tailoring and trade-offs</li> <li>• Identifies risks with appraisal execution</li> </ul>	2.1.1 Obtain Sponsor Commitment 2.1.2 Select Appraisal Scope 2.1.4 Plan Appraisal Details Appraisal Guidance material

**Table C-1. Requirements Traceability Matrix, continued**

## Requirements Traceability Matrix, continued

FAM/CAF conformance  
matrix, continued

Requirement	FAM Paragraph
R16. Guidance for time to conduct appraisal	1.3 Appraisal Roles Each description in chapter 2 includes typical schedule duration for that step
R17. Guidance for appraisal logistics	2.1.4 Plan Appraisal Details Appraisal Guidance material And Appraisal Plan Template
R18. Define artifacts for: <ul style="list-style-type: none"> <li>Recording observations</li> <li>Categorizing observations</li> <li>Classifying observations</li> <li>Validating observations</li> <li>Recording coverage</li> <li>Making rating decisions</li> <li>Reporting findings and ratings</li> <li>Managing logistics</li> </ul>	Appraisal Guidance material
R19. Guidance to implement data collection techniques: <ul style="list-style-type: none"> <li>Administering instruments</li> <li>Conducting presentations</li> <li>Conducting interviews</li> <li>Reviewing documentation</li> </ul>	2.1.7 Administer Questionnaire  2.1.5 Orient Participants 2.2.1 Conduct Opening meeting 2.2.6 Present Draft Findings 2.2.9 Brief Sponsor 2.2.10 Present Final Briefing  2.2.2 Interview Participants  2.2.3 Review Documentation
R20. Guidance for consolidating data collected: <ul style="list-style-type: none"> <li>Extracting information from data gathering sessions</li> <li>Recording data as observations</li> <li>Classifying observations</li> <li>Categorizing as CMM/non-CMM findings</li> </ul>	2.2.2 Interview participants 2.2.3 Review Documentation 2.2.4 Consolidate Data  2.2.2 Interview Participants 2.2.3 Review Documentation  2.2.4 Consolidate Data  2.2.4 Consolidate Data

**Table C-1. Requirements Traceability Matrix, continued**

## Requirements Traceability Matrix, continued

FAM/CAF conformance  
matrix, continued

Requirement	FAM Paragraph
R21. Guidance for validating observations: <ul style="list-style-type: none"> <li>Corroboration from multiple, independent sources</li> <li>Interviews by doers of work or outcome document reviews</li> </ul>	2.2.4 Consolidate Data  2.2.4 Consolidate Data
R22. Guidance to validate observations that includes documentation for each KPA goal	2.2.4 Consolidate Data
R23. Guidance for observation coverage of scope and institutionalization: <ul style="list-style-type: none"> <li>Each goal covered</li> <li>Each KPA covered</li> <li>Each ML covered</li> </ul>	2.2.4 Consolidate Data 2.2.7 Develop Ratings
R24. Mechanisms to adjust collection plans to obtain coverage	2.2.4 Consolidate Data
R25. Guidance for collected data traceability to outputs	2.2.2 Interview Participants 2.2.3 Review Documentation 2.2.4 Consolidate Data 2.2.5 Develop Draft Findings 2.2.8 Develop Final Briefing
R26. Require ratings of: <ul style="list-style-type: none"> <li>KPA:</li> <li>Goals</li> </ul>	2.2.7 Develop Ratings
R27. If appraisal calculates maturity level rating, consistent w/ five level scale in CMM for SW	2.2.7 Develop Ratings

**Table C-1. Requirements Traceability Matrix, continued**

## Requirements Traceability Matrix, continued

FAM/CAF conformance  
matrix, continued

Requirement	FAM Paragraph
R28. Rating process uses the rating values: <ul style="list-style-type: none"> <li>• Satisfied</li> <li>• Unsatisfied</li> <li>• Not applicable</li> <li>• Not rated</li> </ul>	2.2.7 Develop Ratings Note that in the FAM : <ul style="list-style-type: none"> <li>• Process Area Goals are classified as Not rated, Not applicable, Satisfied, or Unsatisfied;</li> <li>• Process area implementation is classified as Not rated, Not applicable, implemented, or not implemented;</li> <li>• Capability Level Goals are classified as Not rated, Satisfied, or Unsatisfied (all Capability Level Goals are considered applicable);</li> <li>• Process Area institutionalization is classified as Not rated, Not applicable, or Institutionalized at level x.</li> </ul>
R29. Rating process specifies: <ul style="list-style-type: none"> <li>• Goals can be rated when coverage is sufficient</li> <li>• KPAs can be rated when goals have been</li> <li>• Maturity level can be rated when KPAs have been</li> </ul>	2.2.7 Develop Ratings
R30. Rating process uses consensus of team	2.2.7 Develop Ratings
R31. Ratings are based on CMM for software, V1.1	Yes. The FAA-iCMM includes the CMM for Software (v1.1), (as well as the SE-CMM (v1.1), and the SA-CMM (v1.06))
R32. Rating process requires ratings to be based on findings	2.2.7 Develop Ratings 2.2.8 Develop Final Briefing
R33. Rating process specifies goals are rated: <ul style="list-style-type: none"> <li>• Satisfied (conditions)</li> <li>• Unsatisfied (conditions)</li> <li>• Not applicable (conditions)</li> <li>• Not rated (conditions)</li> </ul>	2.2.7 Develop Ratings (also see note above under R28)

**Table C-1. Requirements Traceability Matrix, continued**

## Requirements Traceability Matrix, continued

FAM/CAF  
conformance  
matrix, continued

Requirement	FAM Paragraph
R34. Rating process for KPAs based on goals	2.2.7 Develop Ratings (see also note under R28)
R35. Rating process that specifies maturity level by KPA satisfaction	2.2.7 Develop ratings
R36. Reports the team provides are identified:	2.1.4 Plan Appraisal Details
R37. Reporting includes the following data: <ul style="list-style-type: none"> <li>• Scope</li> <li>• Selections (site, projects, product lines, participants, team)</li> <li>• Findings</li> <li>• Ratings</li> <li>• Risks associated with accuracy/completeness</li> </ul>	2.1.4 Plan Appraisal Details 2.3.1 Prepare and Deliver Appraisal Report  2.2.8 Develop Final Briefing 2.3.1 Prepare and Deliver Appraisal Report  2.2.9 Brief Sponsor 2.3.1 Prepare and Deliver Appraisal Report
R38 Report results to SEI	2.3.2 Manage Records Reporting Form
R39. Guidance for protecting confidentiality	2.1.6 Train Team 2.1.5 Orient Participants 2.2.1 Conduct Opening meeting 2.2.2 Interview Participants
R40. Guidance for retention of records	2.3.2 Manage records

**Table C-1. Requirements Traceability Matrix, continued**

*end of Appendix C*



## **Appendix D: Change History and Change Request Form**

### **Change History**

## Change Request Form

<b>SECTION I: TO BE COMPLETED BY REVIEWER</b>			
Name/Organization:		Phone:	Email:
Problem Title:	<input type="checkbox"/> MODEL <input type="checkbox"/> Architecture <input type="checkbox"/> PAs <input type="checkbox"/> Terminology <input type="checkbox"/> _____	<input type="checkbox"/> APPLICATION <input type="checkbox"/> Appraisal Method <input type="checkbox"/> Pilots <input type="checkbox"/> Assurance <input type="checkbox"/> _____	<input type="checkbox"/> PROJECT <input type="checkbox"/> Sponsorship <input type="checkbox"/> Participation <input type="checkbox"/> Schedule <input type="checkbox"/> _____
Description of problem (use back if needed):			
Impact if the problem is not resolved:			
Possible solutions:			
<b>SECTION II: TO BE COMPLETED BY FAA-iCMM Project</b>			
<input type="checkbox"/> Accepted <input type="checkbox"/> Rejected		Priority: <input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low	
Rationale:			
Action Required:			
Disposition:			
Assigned to:			
<input type="checkbox"/> Sponsorship & Adoption Model WG <input type="checkbox"/> _____		<input type="checkbox"/> Planning & Infrastructure <input type="checkbox"/> <input type="checkbox"/> Appraisal WG	
Due Date:			

## Appendix E: List of Appraisal Aids

---

<i>Appraisal Type</i>	<i>Guidance or Toolkit Contents</i>
<b>Full Internal Appraisal (Full FAM)</b>	<p><b>Appraisal Guidance Material</b></p> <ol style="list-style-type: none"><li>1. Plan and Prepare for the Appraisal<ul style="list-style-type: none"><li>• Team Makeup</li><li>• Appraisal Planning</li><li>• Orientation of Appraisal Team and Participants</li><li>• Conducting Presentations</li></ul></li><li>2. On-Site Activities<ul style="list-style-type: none"><li>• Library Management</li><li>• Document Review</li><li>• Questionnaire</li><li>• Interviewing</li><li>• Note taking</li><li>• Consolidate Data</li><li>• Develop Findings Presentations</li><li>• Ratings</li><li>• Appraisal Wrap up</li></ul></li></ol> <p><b>Toolkit:</b></p> <p>Sponsor Brief Appraisal Plan Template Confidentiality Agreement Appraisal Training Materials Organizational Questionnaire Project Questionnaire Appraisal Participants Orientation Brief QBA Questionnaire QBA Administration Brief Opening Brief Document Worksheet Consolidation Worksheet Draft Findings Brief Final Findings Brief QBA Project Profile QBA Organizational Profile</p>

## Appendix E: List of Appraisal Aids, continued

---

<i>Appraisal Type</i>	<i>Guidance or Toolkit Contents</i>
<b>Full Internal Appraisal (Full FAM), continued</b>	Appraisal Feedback <ul style="list-style-type: none"><li>• Sponsor</li><li>• Appraisal Team Lead</li><li>• Appraisal Team</li><li>• Participants</li><li>• Process Appraisal Information System (PAIS) (to SEI)</li></ul>
<b>Facilitated Discussion (FD) Appraisal</b>	FD Project Plan Template Process Template Procedure Template Implementation Plan Template Traceability Matrices Process Area Tracking Chart
<b>Document Intensive (DI) Appraisal</b>	Process Area Documentation Matrices DI Appraisal Team Training Material DI Appraisal Plan Template Opening Meeting Slides Appraisal Team Worksheets Final Briefing Slides
<b>Questionnaire Based Appraisal (QBA)</b>	QBA Questionnaire QBA Data Processing Guide QBA Training Material QBA Sample Briefings QBA Profile Templates

---

## Appendix E: List of Appraisal Aids, continued

---

<i>Appraisal Type</i>	<i>Guidance or Toolkit Contents</i>
<b>Interview Based (IB) Appraisal</b>	Sponsor Brief Appraisal Plan Template Appraisal Training Materials Organizational Questionnaire Appraisal Participants Orientation Brief QBA Questionnaire QBA Administration Brief Opening Brief Consolidation Worksheet Draft Findings Brief (may also be used for preliminary findings) Final Findings Brief
<b>Full External (FE) Appraisal</b>	Project Questionnaire Proposed Project Attributes Mismatch Identification Table

---



# Appendix F: Traceability to ISO/IEC 15504 Requirements

---

## Introduction

ISO/IEC TR 15504 contains two principal areas where conformance may be claimed: in the conduct of a software process assessment; and in the construction of models for assessment compatible with the reference model. ISO/IEC TR 15504-3 contains the requirements for the conduct of an assessment and ISO/IEC TR 15504-2 contains requirements for developing assessment model(s) compatible with the reference model.

The first part of this Appendix demonstrates conformance of the FAA-iCMM Appraisal Method (FAM) with ISO/IEC TR 15504. It provides the map of the FAM, v1.0 activities and outputs to the requirements for assessments conformant with ISO/IEC TR 15504 Information technology – Software process Assessment as described in ISO/IEC TR 15504 – 3: 1998(E), Clause 4. It provides the requirement line item cross-reference to where each ISO/IEC 15504 requirement is addressed in this appraisal method.

This ISO/IEC 15504 mapping is of the full FAA-iCMM appraisal method, and not of its variations.

The FAA-iCMM is the model used for FAM. The second part of this appendix demonstrates areas of compatibility of the FAA-iCMM with 15504 requirements for reference models as described in ISO/IEC 15504-2. It provides a map, at the process area level, of the FAA-iCMM to the requirements in ISO/IEC TR 15504-2: 1998(E), Clause 7.

The expected readers of this appendix include FAM lead appraisers who would use this appendix for tailoring purposes, e.g. nothing from these 15504 based requirements should be tailored out when the full FAM method is applied.

---

# ISO/IEC 15504-3 Requirements Traceability Matrix

ISO/IEC TR 15504 is a standard against which appraisal methods can be compared. Conformance with the ISO/IEC TR 15504 set of requirements “will increase the likelihood that results are objective, impartial, consistent, repeatable, and representative of the processes assessed. Assessments may be compared when their assessment scopes are considered to be comparable.” [ISO/IEC TR 15504-3].

Requirement in ISO/IEC 15504-3 (for appraisal method conformance)	FAM Paragraph
<b>4.2 Defining the assessment input</b>	
4.2.1 The assessment input shall be defined prior to the data collection phase of an assessment and approved by the sponsor of the assessment	2.1.4 Plan Appraisal Details
4.2.2 At a minimum, the assessment input shall specify	2.1.1 Obtain Sponsor Commitment
a) the identity of the sponsor of the assessment and the sponsor’s relationship to the organizational unit being assessed	2.1.1 Obtain Sponsor Commitment
b) the assessment purpose including alignment with business goals	2.1.1 Obtain Sponsor Commitment
c) the assessment scope including: <ul style="list-style-type: none"> <li>1) the processes to be investigated within the organizational unit</li> <li>2) the highest capability level to be investigated for each process within the assessment scope</li> <li>3) the organizational unit that deploys these processes</li> <li>4) the context which, as a minimum, includes the: <ul style="list-style-type: none"> <li>i) size of the organizational unit</li> <li>ii) demographics of the organizational unit</li> <li>iii) application domain of the products or services of the organizational unit</li> <li>iv) size, criticality and complexity of the products or services</li> <li>v) quality characteristics of the products</li> </ul> </li> </ul>	2.1.2 Select Appraisal Scope
d) the assessment constraints which may include: <ul style="list-style-type: none"> <li>1) availability of key resources</li> <li>2) the maximum amount of time to be used for the assessment</li> <li>3) specific processes or organizational units to be excluded from the assessment</li> <li>4) the minimum, maximum or specific sample size or coverage that is desired for the assessment</li> <li>5) the ownership of the assessment outputs and any restrictions on their use</li> <li>6) controls on information resulting from a confidentiality agreement</li> </ul>	2.1.2 Select Appraisal Scope 2.1.3 Select Appraisal Team 2.1.4 Plan Appraisal Details
e) the identity of the model(s) used within the assessment, which shall be compatible model(s) of good software engineering practice that meet the requirements defined in ISO/IEC TR 15504-2	To the Reader 1.2 Context and Usage Appendix F
f) the identity of the assessors, including the competent assessor with specific responsibilities for the assessment	2.1.1 Obtain Sponsor Commitment 2.1.3 Select Appraisal Team
g) the criteria for competence of the assessor who is responsible for the assessment	1.3 Appraisal Roles Guidance Materials
h) the identity of assesseees and support staff with specific responsibility for the assessment	2.1.2 Select Appraisal Scope 2.1.4 Plan Appraisal Details

## ISO/IEC 15504-3 Requirements Traceability Matrix, cont'd

Requirement in ISO/IEC 15504-3 (for appraisal method conformance)	FAM Paragraph
i) any additional information to be collected during the assessment to support process improvement or process capability determination, e.g. specific data (or metrics) that is needed to quantify the organization's ability to meet a particular business goal	2.1.4 Plan Appraisal Details 2.1.7 Administer Questionnaire
4.2.3 Any changes in the assessment input shall be agreed with the sponsor and documented in the assessment record.	2.1.4 Plan Appraisal Details
<b>4.3 Responsibilities</b>	
4.3.1 The sponsor of the assessment shall verify that the assessor who is to take responsibility for and oversee the assessment (the competent assessor) has the necessary competence and skills.	2.1.1 Obtain Sponsor Commitment 2.1.3 Select Appraisal Team
4.3.2 The sponsor shall ensure that resources (both assessors and assesseees where necessary) are made available to conduct the assessment.	2.1.1 Obtain Sponsor Commitment 2.1.4 Plan Appraisal Details
4.3.3 The competent assessor shall confirm the sponsor's commitment to proceed with the assessment	2.1.1 Obtain Sponsor Commitment 2.1.4 Plan Appraisal Details
4.3.4 The competent assessor shall ensure that the assessment is conducted in accordance with the requirements of ISO/IEC TR 15504-3	1.3 Appraisal Roles
4.3.5 The competent assessor shall ensure that participants in the assessment are briefed on the purpose, scope and approach of the assessment.	2.1.5 Orient Participants 2.2.1 Conduct Opening Meeting
4.3.6 Assessors participating in the assessment shall have access to appropriate documented guidance on how to perform the defined assessment activities and the necessary competence to use any instruments or tools chosen to support the assessment	2.1.6 Train Team
4.3.7 The competent assessor shall ensure that all members of the assessment team have appropriate knowledge and skills	2.1.3 Select Appraisal Team 2.1.6 Train Team
4.3.8 On completion of the assessment, the competent assessor shall verify and document that the requirements have been met.	2.2.11 Conduct Wrap-Up 2.3.1 Prepare & Deliver Appraisal Report
<b>4.4 The assessment process</b>	
4.4.1 The assessment shall be conducted according to a documented process that is capable of meeting the assessment purpose	Chapters 1 and 2
4.4.2 The assessment process shall contain at minimum the following activities	
a) Planning A plan for the assessment shall be developed and documented, specifying at minimum <ol style="list-style-type: none"> <li>1) The required inputs defined in ISO/IEC TR 15504-3</li> <li>2) The activities to be performed in conducting the assessment</li> <li>3) The resources and schedule assigned to these activities</li> <li>4) The selection and defined responsibilities of the assessors and organization participants in the assessment</li> <li>5) The criteria for verification of the performance of the requirements</li> <li>6) A description of the planned assessment outputs</li> </ol>	2.1.4 Plan Appraisal Details 2.1.3 Select Appraisal Team

## ISO/IEC 15504-3 Requirements Traceability Matrix, cont'd

Requirement in ISO/IEC 15504-3 (for appraisal method conformance)	FAM Paragraph
<b>b) Data Collection</b> Data required for evaluating the processes within the scope of the assessment [ref 4.2.2 (c) and (i)] shall be collected in a systematic and ordered manner, applying at minimum the following: <ol style="list-style-type: none"> <li>1) The strategy and techniques for the selection, collection, analysis of data and justification of the ratings shall be explicitly identified and shall be demonstrable</li> <li>2) Correspondence shall be established between the organizational unit's processes specified in the assessment scope through the compatible model(s) used for assessment to the processes defined in the reference model in ISO/IEC TR 15504-2</li> <li>3) Each process identified in the assessment scope shall be assessed on the basis of objective evidence</li> <li>4) The objective evidence gathered for each attribute for each process assessed shall be sufficient to meet the assessment purpose and scope</li> <li>5) Objective evidence, based on the indicators, that supports the assessors' judgement of process attribute ratings shall be recorded and maintained to provide the basis for verification of the ratings</li> </ol>	2.1.7 Administer Questionnaire 2.1.8 Develop Exploratory Questions Appendix F 2.2.2 Conduct Interviews 2.2.3 Review Documentation 2.2.4 Consolidate Data 2.2.5 Develop Draft Findings
<b>c) Data Validation</b> The data collected shall be validated. Actions shall be taken to ensure that the validated data sufficiently covers the assessment scope.	2.2.4 Consolidate Data
<b>d) Process Rating</b> A rating shall be assigned based on validated data for each process attribute <ol style="list-style-type: none"> <li>1) The set of process attribute ratings shall be recorded as the process profile for the defined organization unit</li> <li>2) In order to provide the basis for repeatability across assessment, the defined set of assessment indicators in the compatible model(s) shall be used during the assessment to support the assessors' judgement in rating process attributes</li> <li>3) The decision-making process (e.g. consensus of the assessment team or majority vote), that is used to derive rating judgements shall be recorded</li> </ol>	2.2.7 Develop Ratings
<b>e) Reporting</b> The assessment results, including at minimum the outputs specified in Clause 4.5 shall be documented and reported to the Assessment Sponsor	2.2.9 Brief Sponsor 2.2.10 Present Final Briefing 2.3.1 Prepare and Deliver Appraisal Report
<b>4.5 Recording the assessment output</b>	
<b>4.5.1</b> Information which is pertinent to the assessment and will support understanding the output of the assessment shall be compiled and included in the assessment record for retention by the sponsor	2.2.10 Present Final Briefing 2.3.1 Prepare and Deliver Appraisal Report
<b>4.5.2</b> At a minimum, the assessment record shall contain: <ol style="list-style-type: none"> <li>a) the date of the assessment</li> <li>b) the assessment input</li> <li>c) the identification of the objective evidence gathered</li> <li>d) the assessment approach used</li> <li>e) the set of process profiles resulting from the assessment (i.e. one profile for each process assessed)</li> <li>f) the identification of any additional information collected during the assessment that was identified in the assessment input to support process improvement or process capability determination</li> </ol>	2.2.8 Develop Final Briefing 2.2.10 Present Final Briefing 2.3.1 Prepare and Deliver Appraisal Report

# ISO/IEC 15504-2 Requirements Traceability Matrix

ISO/IEC 15504-2 describes a reference model for processes and process capability. Clause 7, titled “Compatibility with the reference model”, contains the requirements for demonstrating that a model of software processes and process capability is compatible with this reference model.

Requirement in ISO/IEC 15504-2 (for model compatibility)	FAA-iCMM Reference
<b>7.2 Model Purpose</b> The model shall be based on good software engineering and process management principles and be suitable for the purpose of assessing software process capability.	The FAA-iCMM describes the essential elements of an organization’s acquisition, engineering, and management process that must exist to ensure good acquisition of software intensive systems. It provides a reference for comparing actual practices against these essential elements. [Chapter 1]
<b>7.3 Model Scope</b>	
7.3.1 A model shall encompass all, or a non-empty subset, of the set of processes in the process dimension of the reference model	The FAA-iCMM includes 23 process areas that encompass a non-empty subset of the processes in the process dimension of the reference model, and that extend those processes in some areas. [Chapter 5]
7.3.2 A model shall address all, or a continuous subset, of the levels (starting at level 1) of the capability dimension of the reference model for all of the processes within its scope.	The FAA-iCMM addresses five capability levels, from 1 to 5, for all processes in the model. [Chapter 4]
7.3.3 A model shall declare its scope of coverage in the terms of both the process and capability dimensions of the reference model.	The scope of the FAA-iCMM in terms of both the process and capability dimensions is described in Chapter 2.
<b>7.4 Model elements and indicators</b>	
7.4.1 A model shall be based on a set of elements that explicitly address the purposes, as defined in the reference model, of all the processes within the scope of the model, and that demonstrate the achievement of the process attributes within the capability level scope of the model.	Each process area contains a purpose statement. [Chapter 5] Process attributes are defined as generic practices within each of the 5 capability levels of the model. [Chapter 4]
7.4.2 In the process dimension, the detailed elements of the model shall constitute a set of indicators of process performance that focus attention on the effective implementation of processes through their work products.	Each process area contains base practices that indicate process performance. Each base practice includes typical work products. [Chapter 5]
7.4.3 In the capability dimension, the detailed elements shall constitute a set of indicators of process capability that focus attention on the process management practices that realize the process attributes.	Indicators of process capability are generic practices at each of the 5 capability levels. The generic practices focus attention on process management practices. [Chapter 4]

## ISO/IEC 15504-2 Requirements Traceability Matrix, continued

Requirement in ISO/IEC 15504-2 (for model compatibility)	FAA-iCMM Reference
<b>7.5 Mapping</b>	
7.5.1 A model shall provide an explicit mapping from the fundamental elements of the model to the processes and process attributes of the reference model.	See next section of this appendix.
7.5.2 The mapping shall be complete, clear and unambiguous and shall substantiate the declaration of the scope of coverage.	See next section of this appendix.
7.5.3 In the process dimension, the mapping shall include the mapping of the indicators of process performance within the model to the purposes of the processes in the reference model.	FAA-iCMM base practices are mapped to FAA-iCMM process area purpose, which map to the purposes of the processes in the reference model. (See next section of this appendix.) .However FAA-iCMM base practices are not mapped to the purposes and outcomes of the processes in the reference model in this table.
7.5.4 In the capability dimension, the mapping shall include the mapping of the indicators of process capability within the model to the definitions of the process attributes in the reference model.	See next section of this appendix.
<b>7.6 Translation</b> A compatible model shall provide a formal and verifiable mechanism for converting data collected against the compatible model into a set of process attribute ratings for each reference model process directly or indirectly assessed as defined in 6.7 of this part of ISO/IEC TR 15504, and in ISO/IEC TR 15504-3.	See next section of this appendix.

## ISO/IEC 15504-2 Requirements Traceability Matrix, cont'd

**7.6 Translation** A compatible model shall provide a formal and verifiable mechanism for converting data collected against the compatible model into a set of process attribute ratings for each reference model process directly or indirectly assessed as defined in 6.7 of this part of ISO/IEC TR 15504, and in ISO/IEC TR 15504-3.

Requirement in ISO/IEC 15504-2 (for model compatibility)	FAA-iCMM Reference or FAM Translation
<b>6.7 Rating process attributes</b>	
<b>6.7.1 Process attribute rating scale</b> <ul style="list-style-type: none"> <li>A process attribute represents a measurable characteristic of any process.</li> <li>The rating scale is a percentage scale from zero to one hundred percent that represents the extent of achievement of the attribute.</li> </ul>	<ul style="list-style-type: none"> <li>Process attributes are captured in the generic practices of the FAA-iCMM for each of the capability levels from one to five.</li> <li>The FAM rating scale represents the extent of (significance of) weaknesses in the performance of practices or adequate alternative practices associated with process area or capability level goals.</li> </ul>
<b>6.7.2 Process attribute rating scale calibration</b> The ordinal rating scale defined below shall be used to calibrate the levels of achievement of the defined capability of the process attributes.	
<b>N Not achieved</b> 0% to 15% - There is little or no evidence of achievement of the defined attribute in the assessed process.	<b>Unsatisfied</b> – There are significant weaknesses in the performance of the (base or generic) practices associated with the (process area or capability level) goal, and no adequate alternatives in place.
<b>P Partially achieved</b> 16% to 50% - There is evidence of a sound systematic approach to and achievement of the defined attribute in the assessed process. Some aspects of achievement may be unpredictable.	(unsatisfied)
<b>L Largely achieved</b> 51% to 85% - There is evidence of a sound systematic approach to and significant achievement of the defined attribute in the assessed process. Performance of the process may vary in some areas or work units.	(probably unsatisfied depending on extent/significance of weakness where performance varies)
<b>F Fully achieved</b> 86% to 100% - There is evidence of a complete and systematic approach to and full achievement of the defined attribute in the assessed process. No significant weaknesses exist across the defined organizational unit.	<b>Satisfied</b> – The (base or generic) practices associated with the (process area or capability level) goal are performed as defined in the FAA-iCMM or with adequate alternative practices. There must be no significant weaknesses.
<b>6.7.3 Process attribute ratings</b> Each process attribute assessed in an organizational unit, up to and including the highest capability level defined in the assessment scope, shall be accorded a rating using the attribute scale defined above. <i>(Note: The set of process attribute ratings for a process forms the process profile for that process. The output of an assessment includes the set of process profiles for all assessed processes.)</i>	<b>2.2.7 Develop Ratings</b>

## ISO/IEC 15504-2 Requirements Traceability Matrix, cont'd

Requirement in ISO/IEC 15504-2	FAA-iCMM Reference or FAM Translation
<b>6.7.4 Referencing of process attribute ratings</b> Each process attribute rating shall be given a reference that records the process name and the process attribute assessed. The identifier used shall enable the objective evidence used to determine the rating to be identified. <i>(Note: The ratings may be represented in any format, such as a matrix or as part of a database, provided that the representation allows the identification of individual ratings according to this referencing scheme.)</i>	<b>2.2.4 Consolidate Data</b> <b>2.2.7 Develop Ratings</b>
<b>6.8 Process capability level model</b>	
<b>6.8.1 Achievement of process capability levels</b> The capability level achieved by a process shall be derived from the attribute ratings for that process according to the process capability level model defined below. <i>(Note: The purpose of this requirement is to ensure uniformity of meaning when a process capability level is quoted for a process)</i>	See below.

ISO/IEC TR 15504 Capability level ratings			FAM ratings
Scale	Process Attributes	Rating	
Level 1	Process Performance	Largely or fully	<b>Implemented</b> – All process area goals are classified as Satisfied or at least one goal is classified as Satisfied with all other goals classified as Not Applicable
Level 2	Process Performance Performance Management Work Product Management	Fully Largely or fully Largely or fully	<b>Institutionalized at Capability Level 2</b> – The process area is <b>Implemented</b> and capability level 2 goal is <b>Satisfied</b> .
Level 3	Process Performance Performance Management Work Product Management Process Definition and Tailoring Process Resource	Fully Fully Fully Largely or fully Largely or fully	<b>Institutionalized at Capability Level 3</b> – The process area is <b>Implemented</b> and capability level 2 and 3 goals are <b>Satisfied</b> .
Level 4	Process Performance Performance Management Work Product Management Process Definition and Tailoring Process Resource Process Measurement Process Control	Fully Fully Fully Fully Fully Largely or fully Largely or fully	<b>Institutionalized at Capability Level 4</b> – The process area is <b>Implemented</b> and capability level 2, 3, and 4 goals are <b>Satisfied</b> .
Level 5	Process Performance Performance Management Work Product Management Process Definition and Tailoring Process Resource Process Measurement Process Control Process Change Continuous Improvement	Fully Fully Fully Fully Fully Fully Fully Largely or fully Largely or fully	<b>Institutionalized at Capability Level 5</b> – The process area is <b>Implemented</b> and capability level 2, 3, 4, and 5 goals are <b>Satisfied</b> .

## ISO/IEC 15504-2 Requirements Traceability Matrix, cont'd

7.5.1 A model shall provide an explicit mapping from the fundamental elements of the model to the processes and process attributes of the reference model. (see Table 1 and Table 2)

**Table 1: Explicit mapping from fundamental elements of the FAA-iCMM to the process attributes of the reference model**

ISO/IEC TR 15504 Capability levels and process attributes		FAA-iCMM Capability levels and generic practices	
ID	Title	ID	Title
<b>Level 1</b>	<b>Performed Process</b>	<b>Level 1</b>	<b>Initial: Performed Informally</b>
PA1.1	Process Performance attribute	GP1.1	Perform the process
<b>Level 2</b>	<b>Managed Process</b>	<b>Level 2</b>	<b>Repeatable: Planned and Tracked</b>
PA2.1	Performance management attribute	GP2.1	Establish policy
		GP2.2	Allocate adequate resources
		GP2.3	Assign responsibility
		GP2.4	Ensure training
		GP2.5	Document the process
		GP2.6	Plan the process
		GP2.7	Use a repeatable process
		GP2.9	Assess process compliance
		GP2.11	Measure process
		GP2.12	Review status
		GP2.13	Take corrective action
		GP2.14	Coordinate within the project
PA2.2	Work product management attribute	GP2.8	Manage configurations
		GP2.10	Verify work products
<b>Level 3</b>	<b>Established Process</b>	<b>Level 3</b>	<b>Defined: Well Defined</b>
PA3.1	Process definition attribute	GP3.1	Standardize the process
		GP3.2	Use defined process
		GP3.3	Perform reviews with peers <i>(additional work product management)</i>
PA3.2	Process resource attribute	GP3.4	Coordinate with affected groups
		also GP2.2	<i>Allocate adequate resources</i>
		GP2.3	<i>Assign responsibility</i>
<b>Level 4</b>	<b>Predictable Process</b>	<b>Level 4</b>	<b>Managed: Quantitatively Controlled</b>
PA4.1	Process measurement attribute	GP4.1	Establish quality objectives for product and process
		GP4.2	Select processes for measurement
		GP4.3	Select measures for the process
PA4.2	Process control attribute	GP4.4	Determine quantitative process capability
		GP4.5	Use quantitative process capability
<b>Level 5</b>	<b>Optimizing Process</b>	<b>Level 5</b>	<b>Optimizing: Continuously Improving</b>
PA5.1	Process change attribute	GP5.1	Perform continual process improvement on the organizational standard and tailored processes
PA5.2	Continuous improvement attribute	GP5.2	Implement improved processes

# ISO/IEC 15504-2 Requirements Traceability Matrix, cont'd

**Table 2: Explicit mapping from fundamental elements of the FAA-iCMM to the processes of the reference model**

ISO/IEC TR 15504 Processes and process categories (with process type*)		FAA-iCMM process areas and process area categories	
ID	Title	ID	Title
<b>Primary Life Cycle Processes</b>		<b>Lifecycle or Engineering Processes</b>	
<b>CUS</b>	<b>Customer Supplier process category</b>		
CUS.1	Acquisition (basic)	PA01 PA05 PA12	Needs Outsourcing Contract management
CUS.1.1	Acquisition preparation (component)	PA01 PA02 PA05	Needs Requirements Outsourcing
CUS.1.2	Supplier selection (component)	PA05	Outsourcing
CUS.1.3	Supplier monitoring (component)	PA12	Contract Management
CUS.1.4	Customer acceptance (component)	PA08	System Test and Evaluation
CUS.2	Supply (basic)	PA06 PA09	Software Development and Maintenance Transition
CUS.3	Requirements elicitation (new)	PA01 PA02	Needs Requirements
CUS.4	Operation (extended)	-	-
CUS.4.1	Operational use (extended component)	-	-
CUS.4.2	Customer support (extended component)	-	-
<b>ENG</b>	<b>Engineering process category</b>		<b>Lifecycle or Engineering Processes</b>
ENG.1	Development (basic)	PA02 PA06 PA08 PA09	Requirements Software Development and Maintenance System Test and Evaluation Transition
ENG1.1	System requirements analysis and design (component)	PA01 PA02 PA03	Needs Requirements Architecture
ENG1.2	Software requirements analysis (component)	PA06	Software Development and Maintenance
ENG.1.3	Software design (component)	PA06	Software Development and Maintenance
ENG.1.4	Software construction (component)	PA06	Software Development and Maintenance
ENG.1.5	Software integration (component)	PA06	Software Development and Maintenance
ENG.1.6	Software testing (component)	PA06	Software Development and Maintenance
ENG.1.7	System integration and testing (component)	PA07 PA08	Integration System Test and Evaluation
ENG.2	System and software maintenance (basic)	PA06	Software Development and Maintenance
-	-	PA10	Product Evolution

## ISO/IEC 15504-2 Requirements Traceability Matrix, cont'd

**Table 2: Explicit mapping from fundamental elements of the FAA-iCMM, to the processes of the reference model, continued**

<i>Supporting Life Cycle Processes</i>		<i>Supporting Processes</i>	
<b>SUP</b>	<b>Support process category</b>		<i>Supporting Processes</i>
SUP.1	Documentation (extended)	-	-
SUP.2	Configuration management (basic)	PA16	Configuration Management
SUP.3	Quality assurance (basic)	PA15	Quality Assurance and Management
SUP.4	Verification (basic)	PA08	System Test and Evaluation
SUP.5	Validation (basic)	PA08	System Test and Evaluation
SUP.6	Joint review (basic)	PA17	Peer Review
SUP.7	Audit (basic)		-
SUP.8	Problem resolution (basic)	PA04	Alternatives
	-	PA19	Prevention
<i>Organizational Life Cycle Processes</i>			
<b>MAN</b>	<b>Management process category</b>		<i>Management or Project Processes</i>
MAN.1	Management (basic)	PA11	Project Management
MAN.2	Project management (new)	PA11 PA14	Project Management Coordination
MAN.3	Quality management (new)	PA15	Quality Assurance and Management
MAN.4	Risk management (new)	PA13	Risk Management
<b>ORG</b>	<b>Organization Process Category</b>		<i>Organizational Processes</i>
ORG.1	Organizational alignment (new)		-
ORG.2	Improvement process (basic)	PA20 PA21	Organizational Process Definition Organizational Process Improvement
ORG.2.1	Process establishment (component)	PA20	Organizational Process Definition
ORG.2.2	Process assessment (component)	PA20	Organization Process Definition
ORG.2.3	Process improvement (component)	PA21 PA23	Organization Process Improvement Innovation
ORG.3	Human resource management (extended)	PA22 PA14	Training Coordination
ORG.4	Infrastructure (basic)	PA23	Innovation
ORG.5	Measurement (new)	PA18	Measurement
ORG.6	Reuse (new)		-

\*Process types are:

Basic – processes identical in intent to the processes in ISO/IEC 12207

Extended – processes that are expansions of ISO/IEC 12207 processes

New – processes that are outside the scope of ISO/IEC 12207

Component – processes (a group of one or more ISO/IEC 12207's activities from the same process)

Extended Component – processes that are one or more of ISO/IEC 12207's activities from the same process, with additional material. These would normally be Component processes of Extended processes.